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MORRIS FISHBEIN, M.D.

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OUR OBSTETRIC AND GYNECOLOGIC RESPONSIBILITIES *

GEORGE GRAY WARD, M.D.
NEW YORK

The specialty of obstetrics and gynecology—it will be noted that I speak of "the specialty," not the "specialties"—is composed of two parts, which are so related and interwoven that they cannot be divorced without disadvantage to both. This specialty comprises the study of the physiology and pathology of the reproductive system of woman, and as such should be considered in toto.

As one of the most important sections of this great association representing one of the fundamental departments of medicine, we must appreciate the responsibilities which rest on us when we realize that obstetrics is the general practitioner's specialty, and that with the possible exception of pediatrics, there is no one of the special departments of our profession which concerns him so greatly and which touches so vitally the welfare of the community.

What may be said here is broadcast to the general medical public and is rightfully regarded as authoritative, and consequently will mold the opinions and guide the trend of obstetric practice for the good or ill of womankind. It must always be that the great bulk of obstetrics will be done by the general practitioner, and the measure of mortality and morbidity of the childbearing women of the community will be in direct proportion to the sound obstetrics that he practices.

That there is a great need of propaganda to awaken the profession to the fact that obstetrics, as generally practiced at the present, is wofully below the standard that maternity hospital statistics show is demonstrated by a recent study made of the maternal mortality in Massachusetts during 1922 and 1923, wherein 984 deaths in the puerperal state have been analyzed by the Division of Hygiene of the Massachusetts Department of Public Health.[1]

This analysis shows the appalling facts that septicemia, toxemia and hemorrhage, causes of maternal mortality that are generally preventable, were the responsible factors in 58 per cent of the deaths. There was a lack of proper prenatal care in 89 per cent of the cases, and a clear impression was gained that the factor of operative intervention had a marked influence on the total of unfavorable results. Operative procedures were resorted to in 591 of the 984 cases. More than 22.5 per cent died of puerperal infection (nearly one fourth), yet we are living in the age of aseptic surgery. It would almost appear as though Holmes and Semmelweiss, in pointing out the cause of puerperal fever, and Lister, in showing us the remedy, had labored in vain. Twenty-two per cent died of toxemia, a preventable disease and an indication of a lack of or inadequate prenatal care. In these 984 maternal deaths, 430 of the infants were lost.

Polak states that in New York, in 1920, there was one maternal death in every 205, one baby dead out of every twenty-one, and that 61 per cent of gynecologic surgery is the result of poor obstetrics. The fault must lie in inadequate and improper obstetric teaching, or must be due to criminal carelessness, the result of a lack of a surgical conscience, or both. The fact that there is a tendency for a steady decline in the birth rate only adds to the seriousness of the situation. The birth rate for England and Wales in 1925 is the lowest recorded (excepting the war years of 1917 and 1918), and has been steadily falling from 22.4 per thousand in 1921 to 18.3 in 1925, and the rate in the United States is also declining.

It is meet, then, that we should arise to the urgent necessity of sounding an alarm to awaken the man who comes most closely in touch with the life of the people to a sense of his shortcomings, and to spur ourselves as teachers to a realization that our instruction is inadequate and may be deficient in conservatism. The fact that some expert obstetricians can more or less safely hasten labor by operative intervention, thus saving themselves time and shortening the patient's immediate ordeal, together with our national tendency to hurry in the rush incident to competitive practice, has been the cause of the general practitioner and many so-called specialists drifting away from the well proved if circuitous lanes of safety to those dangerous short cuts which too often lead to disastrous results for both mother and child.

He who attempts to make nature deviate from her normal physiologic processes must remember that, while he may accomplish his immediate object, it is very apt to be at an exorbitant price.

Patience is a better obstetrician, in the majority of cases, than dexterity.

Haste is not compatible with thoroughness in the practice of medicine and tends toward developing a commercial aspect instead of a scientific one. Osler, in one of his addresses, pities the "forty visit a day man" and councils the prayer against the evils of prosperity, lest he tend toward slovenliness in his methods of work, and quotes:

> Now sickening Physick hangs her pensive head
> And what was once a Science now's a Trade.

Polak and Lynch, as chairmen of this section, have called attention to the lack of clinical facilities in

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* Chairman's address, read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[1] Coffin, Susan M.; DeKruil, Mary F.; Southard, Mable A., and Hamblen, Angeline D.: Maternal Mortality in Massachusetts, J. A. M. A. 86:408 (Feb. 6) 1926.

obstetric teaching in the majority of our schools, and have pointed out the tendency to ignore physiologic laws and to resort to surgery. That there has been but little improvement in the matter is my reason for bringing up the subject again.

Williams[2] has deplored the lack of productiveness in research by American obstetricians. This sterility is not entirely the fault of the teachers themselves, but is in great part due to the lack of appreciation by many educational authorities of the importance of obstetrics as one of the fundamental branches of medicine, and that proper provision is not made for a fully equipped department of sufficient size to allow of abundant clinical opportunities for teaching. In most of our schools, obstetrics is the least cared for department. Is it any wonder that obstetric research is dormant under such circumstances?

The union of obstetrics and gynecology is essential if we are to expect better obstetric research, as the physiology and pathology of the reproductive system of woman must be considered as a whole if we are to solve successfully the problems that are so interwoven with both sciences. The intimate relation between obstetrics and gynecology that exists in European clinics has, unfortunately for both branches of the specialty, not found universal application in this country. Gynecology in its beginnings was largely reparative and therefore surgical, and its tendency was to develop independently for this reason. But in recent years there has been an awakening to an appreciation of the broader gynecology, which comprises all phases of the reproductive function and of which surgical therapy is only a part.

The important problem of sterility requires an intensive study of the physiologic processes of reproduction as well as the pathologic changes due to disease. Greater attention has been recently paid to the physiology of the female reproductive system, and more detailed studies have been made in this direction. The work of Rubin and others in the determination of the patency of the tubes, the study of the processes of ovulation by Stockard and Papanicolaou, the research being carried out on the ovarian hormones by numerous observers, all have important bearing on obstetric problems, and are only an index of the changing attitude toward a closer association of the gynecologist and the obstetrician as their problems prove to be intermingled. In preventive obstetric measures lie the means of avoiding many gynecologic lesions. If the general practitioner will only do his full duty toward his obstetric patients, more than half of the work that is now done by the gynecologist will not be necessary. This will require the earnest attention of the obstetrician not only during the labor but also in the antenatal and postnatal periods. The care of the pregnant woman before labor has been accorded increasing attention in the United States, and constitutes a contribution to our science for which we may justly claim credit. This development has rendered necessary resort to lay organizations for financial aid and support, and has awakened an interest which, if properly directed, will do much to increase the dignity of obstetric practice. It is important, however, that a proper balance be maintained, so that the lay interest will not dominate the medical interest. The passage of the Sheppard-Towner act at Washington five years ago and its recent extension have awakened the interest of the entire country on the important problem of maternal welfare. Federal participation would probably be better limited to an advisory capacity only, with the individual states each assuming its responsibility for carrying on its own welfare program.

The advent of the nurse specially trained for obstetric work is a result of the increasing demands made by proper prenatal care, as such competent assistance is needed to carry out the work that physicians can only supervise. This training of the obstetric nurse should be given serious consideration. This is about to be done by the special committee on maternal welfare of the associated national societies interested in obstetrics and gynecology.

We would plead for more attention being directed toward adequate postnatal care and an obstetric follow-up. We must not forget that while we hear much about prenatal work, postnatal care is also of importance as a factor in gynecologic prophylaxis.

The gynecology of today has undergone a great expansive change from the gynecology of yesterday, which was largely confined to the narrow field of operative technic. This broader development which has taken place is largely the result of the application of the fundamental principles of physics and chemistry in the study of life processes, and through the sciences of biology, biochemistry and genetics, a better appreciation has been brought about of the intimate relations existing between the reproductive organs and the body as a whole. We are learning to heed the admonition of Plato in the Charmides, that the whole must be studied also, "for the part can never be well unless the whole is well."

There is apt to be overspecialization in all specialties, with a tendency to ignore the outside relations to the problem in hand. The general sugeon and the internist are also frequently at fault in slurring over the gynecologic condition of their patients, although the ovarian function may enter as an important factor in many general problems of disease. While we preach that the gynecologist should look afield generally, we must also urge that the general surgeon and internist should look locally.

As the study of medicine has now become a study of biologic science, our hope for future progress in the specialty must lie in part in that direction. Our present knowledge of the cellular metabolism that is constantly taking place in the blood and the vessels, in the nerve centers and individual cells, and in the endocrine glands during the phenomena of menstruation, ovulation, conception and pregnancy, is very superficial. The physiologic chemist and the biologist must work hand in hand with the clinician in both the operating room and the laboratory to this end. It is essential that we should first know the normal processes of nature in order to be able to cope with abnormal changes. A better knowledge of the physiology of the reproductive system, of which we know very little at present, must be our immediate goal.

Our progress, however, does not rest entirely on biochemical research. A tremendous improvement in our ultimate results is easily possible and within our immediate reach, when we learn to apply the principles of organization and a common sense audit to our daily work. Organization implies system, and system is essential if we are to attain a uniform degree of accuracy in diagnosis. Science is essentially a matter of observation, and our observations, whether clinical at the bedside or in the laboratory, must of necessity be precisely and completely recorded if they are to be of value for comparative study and deductive reasoning. The day of "snap opinions" as to our end-results not backed up by recorded facts is slowly giving way to the carefully analyzed observations that are becoming more generally available as a result of the better hospital organization which is everywhere apparent. Many of our accepted ideas as to our postoperative morbidity are founded on tradition. These views will be materially changed in many instances when submitted to careful statistical study. Organization means a more accurate diagnosis, and a correct diagnosis is essential for a cure and will often prevent unnecessary surgery. This takes time. There is no short road. The careful history, the complete physical examination, the laboratory check up, coupled with whatever advice with consultants is indicated—in other words, careful preoperative study and preoperative preparation—is, after all, the least that we can do to safeguard the interests of those who place their lives and well being in our hands. This should be considered as the ordinary care that the patient is entitled to expect.

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[2] Williams: Tr. Am. Gynec. Soc., 1914.

To Codman belongs the credit of awakening us to the need of end-result study if we are to appreciate its true proportion our successes and failures; but a real audit and study of our hospital records is as yet only sporadic, and is not universal as it should be.

The mortality and morbidity results of a hospital staff and the percentage of successes, partial successes and failures of certain lines of treatment are of the utmost importance in influencing the trend of our practice, and therefore the health of the community. On the reliability and completeness of our records, the value of these percentages must depend. For instance, in abdominal surgery the study of the healing of our wounds is of economic importance to both the hospital and the patient as having a direct bearing on the duration of the convalescence. Probably no other postoperative complication which the abdominal surgeon encounters is as generally responsible for a loss of time as that caused by faulty union, of even a minor degree.

CLASSIFICATION OF WOUND HEALING

A recent survey made after several years' experience with an idealistic classification of wound healing, which we employed at the Woman's Hospital, has proved that it was not practical, was too laborious for the staff to carry out with the best of intentions, and did not readily permit of comparative study with other clinics. Consequently, we have discarded it and have adopted the following classification, which may be of interest as an illustration of a postoperative audit:

The classification has been based on the principle that defective wound healing is dependent on either infection (sepsis) or faulty technic, and with the idea of enabling the ready comparison of percentages of infection with other clinics. For our own information we record the minor defects, the result of faulty technic not due to infection. All sutured operation wounds are designated by the surgeon at the time of operation as "clean" or "contaminated" in accordance with whether they have been exposed to infection from within or without, irrespective of whether drainage is used or not. At the time of the patient's discharge, the surgeon records on the record form the healing of the wound according to the following classification:

Class A: Wounds that heal in an ideal manner without defect.

Class B: Wounds that heal aseptically but with minor defects, the result of faulty technic, as eversion of wound edges, stitch or fat necrosis, hematoma, breaking and retention of nonabsorbable sutures, or exudates of serum, blood or serosanguineous fluid without the signs of inflammation.

Class C: Wounds that have the clinical signs of inflammation and infection, including wide separation of tissues from any cause necessitating granulation (potentially infected wounds), and persistent sinuses.

1. Minor: Small local infections, in which the healing of the wound is not materially delayed.
2. Major: Any infection greater than the minor classification, and gross defects and sinuses.

This classification applies to both drainage and nondrainage cases.

The record department files index cards of all cases of infection and faulty union in the clean and contaminated groups for each surgeon. The percentage of infections of each operator is thus made available, and the yearly composite percentage of the entire staff is readily determined.

It is the established custom for business corporations to have their financial audit made and certified by chartered accountants. Great improvement in the accuracy and consequently in the scientific value of our hospital records will be accomplished if we have our record departments regularly checked up and our statistical data compiled and charted by the professional statistician. We have already inaugurated this innovation at the Woman's Hospital.

I have said that our present shortcomings in obstetric practice must be due to inadequate teaching or a lack of conscience. As a remedy for the first, I would urge that a survey be made by the Council on Medical Education and Hospitals of the American Medical Association of the facilities offered in obstetrics at the present time by our American medical colleges, with a view toward fostering a well balanced curriculum of theoretical and practical teaching, with particular attention to the relation between obstetrics and gynecology. Such constructive work would do much toward developing a greater respect and attention for this important specialty, and would show the urgent need of better opportunities in this neglected field of medical education.

As to the second cause of our delinquency, what we need today is an awakening of our surgical conscience. Longyear has reminded us that skilful surgeons may not all be conscientious, and conscientious surgeons may not all be skilful. A full appreciation of this can best be brought to our attention by a proper audit of our results. To awaken our conscience, we must be made to appreciate the existing facts by bringing them out into the spotlight—to this end there is no answer but the word "audit." We must audit the morbidity statistics as well as the mortality statistics of our clinics as systematically and accurately as we do our finances—then only shall we see the light that will stimulate us to live up to our obstetric and gynecologic responsibilities.

48 East Fifty-Second Street.

Malpositions of the Child.—An enormous number of women are allowed to drift into labor . . . without any attempt being made to diagnose and correct malpresentations prior to labor. Transverse presentation can always be corrected, even in the later days of pregnancy. A similar procedure should also be followed in breech presentation, a complication not very serious in a multipara, but attended with great difficulty and resulting often in serious injury to the mother and child if the parturient is a *primipara*. Now, practically all these cases of breech presentation can be recognized in the later weeks of pregnancy, the child turned, and a vertex presentation established.—Kerr, J. M. M.: *Brit. M. J.*, June 12, 1926.

INTESTINAL FLAGELLATE INFESTATION

CLINICAL ANALYSIS *

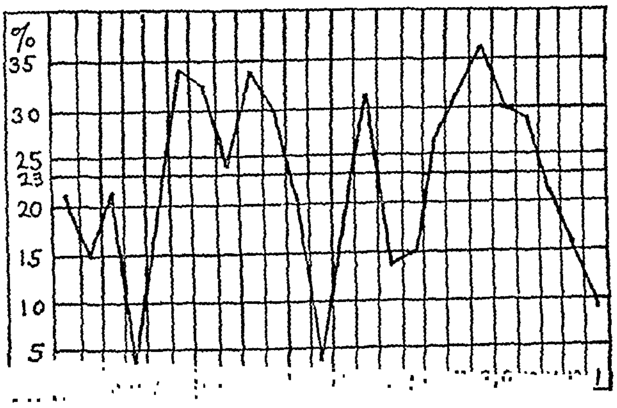
KENNETH M. LYNCH, M.D.
DALLAS, TEXAS

The occurrence of flagellated protozoa in the intestine of man is world-wide and of considerable prevalence. Of recent years there has been considerable attention paid to them as possible causative factors in disease. The organisms have not lent themselves well to thorough experimental investigation, and their common prominence in clinical studies of maladies of obscure origin makes them naturally liable to such suspicion.

The fundamental fault, it seems to me, in previously reported clinical studies of "flagellosis" is the lack of control study. It is recognized that proper scientific control of such studies, which do not lend themselves to experimental confirmation, is most difficult. It is with this in mind that the present study has been conducted. An analysis has been made of 1,040 consecutive clinical cases in which gastro-intestinal studies had a prominent place on account of the symptoms displayed, the study being spread over a period of about four years, the particular purpose being to compare the conditions encountered in those who harbored flagellates with those in the flagellate-free.

STOOL EXAMINATION

Stool examination is conducted as follows: When diarrhea is present, the natural stool is taken; when it is not, a saline purged stool is taken, the examination being done as soon after passage of the stool as possible. I may say that this is not the manner in which amebas should be identified. When they are present without cysts, a positive differentiation is not made until a stool showing the cysts is obtained. Unless the stool is sufficiently liquid to offer clear through and through vision of the slide and cover preparation, it is thinned with physiologic sodium chloride solution (water destroys *Chilomastix* trophozoites almost immediately). The majority of the stools in this series have been examined only once, although when conditions make it possible three different stools are advised. It is recognized, therefore, that some instances of the infestation may have been overlooked. In the light of other well conducted studies, something may therefore be added to my figures of incidence, but not more than about one fourth.



Monthly and seasonal incidence of flagellate infestation; winter, 15 per cent; summer, *27*; average, 23.

Of the 1,040 patients, 23 per cent harbored flagellates; 12.5 per cent, *Trichomonas hominis*; 7.5 per cent, *Chilomastix mesnili* (*davainei*); 2.3 per cent, *Giardia intestinalis*, and 1.5 per cent, *Tricercomonas intestinalis*. There were unidentified flagellates in 1.7 per cent, these being so classified because I myself did not make the stool examination.

SEASONABLE PREVALENCE

In order to determine whether there is a seasonal variation in incidence, I have charted graphically the percentage of occurrence for twenty-four consecutive months (except one in which the data were lost). It is seen on the chart that with one or two exceptions the warm months are above the average (*27* per cent incidence) and the cold months below (15 per cent incidence). In this calculation I have used as the cold months December, January, February, March and April, which division some may question unless they know the climate and have the conditions of transmission and establishment of such parasites in mind. For instance, April is not ordinarily a cold month here, nor is November entirely a warm month, but I have so classed them to allow for the establishment of presumably prime conditions for transmission and time for establishment after the winter in the one case and for the opposite purpose in the other. An interchange of them does not materially effect the result.

Relation to Age, Sex, Residence and Pathologic State

	Flagellate-Infested, Per Cent	Flagellate-Free, Per Cent
Males	47	40
Below 40 years of age	43	53
Below 50 years of age	68	83
City residence	71	70
Occult blood in stool	67	71
Achlorhydria	32	19
Hyperchlorhydria	10	25
Diarrhea	9	8
Constipation	57	55
Colitis	6	11
Peptic ulcer	0	10
Chronic cholecystitis	38	22
Chronic appendicitis	22	25

PLACE OF RESIDENCE

A tabulation of place of residence of all cases has been made in order to determine whether the incidence of these parasites bears a relation to living under or away from modern sanitary conditions. City residence is used to indicate where such sanitary facilities are available and country residence where this is not the case. Practically all are from north Texas, within a radius of some 200 miles of Dallas. Seventy-one per cent of the flagellate-infested patients and 70 per cent of the flagellate-free lived in the city. Of course, one cannot say that any city dweller did not pick up his flagellates when away from his home conveniences or that the country dweller got his at home; but it appears that either is as subject to the infection as the other.

RELATION OF AGE AND SEX TO INCIDENCE

Of the parasitized patients 47 per cent were males, while 40 per cent of the free were males, perhaps indicating that men may be a bit more exposed to the infection than women, although the difference is not great enough to make a point of. Smithies [1] records that in his study of 265 patients harboring intestinal protozoa, 172 were males and ninety-three were females.

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* From the Dallas Medical and Surgical Clinic.

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[1] Smithies, Frank: Protoziasis Occurring in Temperate Zone Residents, Am. J. Trop. Med. 6: 1 (Jan.) 1926.

Forty-three per cent of the flagellate-infested patients were below 40 years of age, and 68 per cent were below 50, while in the flagellate-free group 53 per cent were below 40 and 83 per cent below 50. The difference here is distinct; undoubtedly the later years of life increase the liability. This may be simply the accumulation of time, but it seems to bear a relation to certain other conditions which are apt to be more intimate with later life.

GASTRIC ACIDITY

One of these seemingly related states refers to the condition of the acid secretion of the stomach. One or more gastric analyses were done on the majority of both groups, including a fasting analysis and again after an Ewald meal. For the purposes of this study, three conditions are tabulated: anacidity when no free hydrochloric acid occurred; hyperacidity when the hydrochloric acid was above 50 degrees; while all the region between these two states is taken as normal ground, in view of the difference of opinion in these matters, as I did not care to make more than a very broad distinction for the purpose in view. Thirty-two per cent of the parasitized patients showed no free hydrochloric acid, while this condition was present in 19 per cent of the free. On the other hand, 25 per cent of the flagellate-free showed hyperchlorhydria, while this was the case in but 10 per cent of the flagellate-infested. The remainder, 57 per cent of the parasitized and 56 per cent of the free, in round numbers, were in the "normal" region. Does this higher incidence of hyperchlorhydria in the flagellate-free and of achlorhydria in the parasitized mean that flagellates are etiologic factors in pathologic states which lead to decrease in acid secretion in the stomach, or does the lowering of the acid barrier explain the higher incidence of the flagellates?

In my hands, *Trichomonas hominis* was destroyed experimentally by 0.1 per cent hydrochloric acid in tap water within one hour's time, while the same acid in 0.9 per cent sodium chloride solution reduced them to very few, and 0.2 per cent acid in sodium chloride solution destroyed them. *Giardia* trophozoites were killed by 0.1 per cent acid in 0.9 per cent sodium chloride solution in a few minutes, while *Chilomastix* trophozoites succumbed about as did *Trichomonas,* except that they would not stand exposure to water at all. Of course, the last two have encysted phases in which they must be more resistant. High normal and excess acid values will undoubtedly interfere with the passage of flagellates in the active stage through the stomach, while they may pass readily when the acid is low or absent. In view of this and the supporting evidence to be obtained from the finding of higher flagellate incidence in later life, when achlorhydria or low acid values are more prominent, as well as in certain clinical syndromes to be presently noted, it appears that lowered gastric acidity is a cause rather than a result of flagellate infestation.

PEPTIC ULCER

Gastric and duodenal ulcers are conditions in which hyperchlorhydria is common. They are also more related to early life as contrasted, for instance, to chronic cholecystitis. The sharp difference in the occurrence of a clinical diagnosis of peptic ulcer, 10 per cent in the flagellate-free group against none in the parasitized, furnishes support to the previous opinion in reference to the relation between flagellates and gastric acid. It would, indeed, be a flight of imagination to entertain the thought that flagellates protect against gastric and duodenal ulcers.

CHRONIC CHOLECYSTITIS

Fitting this line of thought comes the comparison between the clinical opinion of chronic cholecystitis in the two groups. This is recorded in 38 per cent of the flagellate-infested group and 22 per cent of the other. Chronic cholecystitis is generally a disease of later life and is commonly accompanied by achlorhydria or low gastric acidity, both of which conditions have here a definite relation to higher flagellate incidence. Chronic cholecystitis is one of the conditions in which a tendency has been noted recently to incriminate intestinal protozoa, and, considered separately, this might be taken as evidence in favor of such a view. Account must also be taken of the fact that 22 per cent of the flagellate-free group have a like condition recorded. It would really seem that on such evidence one might as well attempt to explain the higher incidence of chronic arterial disease in this group.

CHRONIC APPENDICITIS

Perhaps support of this line of thought comes also from the incidence of chronic appendicitis, this being a clinical diagnosis in 22 per cent of the flagellate-infested and in 25 per cent of the flagellate-free. Whatever favor is in these figures is for the flagellate-free group; but one would not care to attach any great importance to a diagnosis that may be so subject to argument.

EVIDENCE OF INTESTINAL DISEASE

Perhaps diarrhea is the condition longest and most commonly ascribed to the flagellates. In this study it takes a comparatively inconspicuous place, there being diarrhea at the time of examination or a history of diarrhea in 9 per cent of the flagellate-infested and in 8 per cent of the flagellate-free. When diarrhea was present there was no gross or microscopic characteristic feature. It was impossible to say that a watery stool or a frothy, gassy stool was distinctive of the presence of flagellates. Constipation was much more prominent but of practically the same ratio in both groups, 57 per cent of the parasitized and 55 per cent of the free. The benzidine test for occult blood in the stool was positive in 67 per cent of the parasitized patients and in 71 per cent of the others. These figures should be considered in only a comparative way because, although proper preparation of the patient for this test was carried out whenever feasible, probably the majority of all had not been sufficiently prepared and both figures are, no doubt, too high.

There is a clinical interpretation of colitis in 6 per cent of the parasitized group and in 11 per cent of the other, this clinical opinion being based usually on roentgen ray and proctoscopic or sigmoidoscopic examination in addition to other signs and symptoms. This, I believe, must be subjected to considerable reservation and should be used only in a comparative way.

From all the data that would seem to bear on the effect of these parasites on their intestinal habitat, there is no evidence of local pathogenicity of the flagellates, or, to put it more literally, there is nothing of such significance that is not just as prominent in the nonparasitized.

BLOOD EXAMINATION

Blood counts and hemoglobin estimations have been done in all cases without revealing any apparent difference in the two groups. There was no case of eosinophilia in which some known eosinophilia-producing factor, such as uncinariasis or asthma, was not recognized as the cause. Anemia was no more prominent in the parasitized group, and there was no evidence of clinical failure to determine some other plausible cause for any existing anemia. The relative lymphocytosis in a normal or, perhaps, low leukocyte count, which some have been inclined to attribute to intestinal protozoa, is a common occurrence in our study of chronic inflammatory disease, particularly coupled with focal bacterial infection, whether flagellates are present or not.

As for the various nervous system disturbances which I have chosen to indicate by the term "neurasthenia," nothing can be made of any relationship to flagellates in this study.

Arthritis deformans, which Barrow[2] has found in 11 per cent of his protozoal cases and in which he has found 100 per cent intestinal protozoa infestation is conspicuous by its absence in this study, there being no recorded case in the parasitized group. Arthritis deformans is not a common disease in our practice.

SUMMARY

It is planned to continue and to elaborate this study on the same controlled lines as are laid down here and to make further critical analysis of each species concerned. Thus far, considering the intestinal flagellates as a group, I have been unable to incriminate them of pathogenic activity. The reservation which, perhaps, may be made in this study concerns the question of their relation to chronic cholecystitis, although it seems that it becomes a burden to prove that they bear any etiologic relationship to this condition, whereas the ground for the conception that the factors of age and diminished gastric acidity related to it predispose to the presence of these parasites seems fairly clear. The results of the study, thus far obtained, seem to lend little or no support to the growing tendency to incriminate intestinal flagellates as pathogenic agents, but rather to the contrary.

ABSTRACT OF DISCUSSION

Dr. Aldo Castellani, New Orleans: The flagellates found in the human intestine are *Trichomonas intestinalis, Chilomastix mesnili* and *Lamblia* or *Giardia intestinalis. Trichomonas intestinalis* and *Chilomastix mesnili* live in the lumen of the intestine, and therefore it is difficult to see how they can be pathogenic unless they are present in enormous numbers. The third parasite, however (*Lamblia, Giardia*), is supplied with a small sucking apparatus by means of which it attaches itself to the epithelium of the intestinal mucosa and actually penetrates the mucosa. Therefore, it is quite possible that when *Lamblia* is present in very large numbers it may give rise to intestinal trouble. The treatment of the intestinal flagellates comes under two heads—diet and drugs. Hegner, three or four years ago, suggested a strictly meat diet, and two or three clinicians have reported good results. On a strictly meat diet the patient becomes constipated, and the flagellates disappear from the stool. But the disappearance of the flagellates is apparently not real; if a dose of salts is given, any number of flagellates are present in the stool the moment the patient has a fluid movement. Drug therapy has been very disappointing. In cases of *Giardia* infection, if the cysts are present in small numbers, I do not give any treatment. If they are present, however, in enormous numbers, when I think they may possibly give rise to some intestinal trouble, I order calomel, 1 grain (0.65 Gm.) at night, or ⅓ grain (0.02 Gm.) three times a day for a week. The second and third week the dose is increased. In certain cases the results are fairly satisfactory.

Dr. George A. Gray, San Jose, Calif.: The outstanding point in this subject is the absence of definite or characteristic diagnostic symptom in infestations with these organisms. Discussants of the topic of focal infection bring out the point that foci of infection have been removed, but few take into consideration foci of a protozoan nature in the intestinal tract. One of the main symptoms to my mind is that of so-called weakness in the knees. It comes near being a characteristic symptom. Constipation, too, is more commonly present than any other symptom. As a rule, however, I believe that the symptoms are rather in some other place than in the gastro-intestinal tract. As to the treatment, as has been said, it is unsatisfactory in most cases. However, I have been treating *Giardia* infestation with mercurochrome-220 soluble for about three years, and the results have been very good. One must, however, consider the susceptibility of the patient to mercury. There is about 25 per cent metallic mercury in mercurochrome and 85 per cent in calomel. Therefore, mercurochrome is about one third as strong as calomel, as far as its being a laxative. I have obtained negative stools in approximately eleven cases treated with mercurochrome. In two cases *Giardia* was present in large quantities in the bile as obtained by biliary drainage (Lyon-Meltzer method). The mercurochrome could not get at these flagellates in these cases. The stool tests returned positive, and the symptoms persisted after mercurochrome therapy. These were my only failures. I ordinarily started with a ½ grain (0.03 Gm.) tablet enteric-coated at night, for two or three days to make sure that the individual is not susceptible to mercurochrome or hypersensitive to mercury. If no abnormal symptoms ensue, I increase the dosage to ½ grain (0.03 Gm.) or even 1 grain (0.065 Gm.) after each meal. The main thing is to get a mahogany colored stool. Ordinarily there will be no other symptoms. If the dose is too large, a slight enteritis may result. If a mahogany colored stool is not obtained, it may be necessary to increase the dose. A mahogany colored stool is the standard used to judge sufficient dosage. This treatment is continued for from one to three weeks.

Dr. John V. Barrow, Los Angeles: We cannot prove absolutely that these organisms are the cause of certain diseases until we have succeeded in growing them in pure culture. Likewise, adequate treatment awaits the accomplishment of this result. Etiologically, these protozoa cannot be grouped all together with any more reason than we could group all bacteria as a single causative factor of disease. Protozoan pathologic conditions must be looked for both locally and systemically. As an irritant to mucous membrane, they probably are far more potent than bacteria and furnish atria for subsequent easy bacterial invasion. As an absorbable foreign, toxic protein, their billions of dead bodies produce the direst systemic pathologic conditions. We know that certain foreign proteins produce marked effect when absorbed from the skin. Why can we not look for allergic and anaphylactic reactions from the mucous membrane as well? The similarity of symptoms which these patients manifest is striking. The general low vitality, the tendency to neuritic disturbances, neck pains and muscle weakness often accompany such laboratory findings as hypochlorhydria and liver dysfunction. These are symptoms of chronic toxic absorption. Logically, these protozoa would affect such organs as the stomach by the systemic route, i. e., toxic depression of secretory glands, and asthenia of muscle tissue. Texas is a rare and salubrious state; but if she can gather together 1,000 cases of protozoan infections without a single case of arthritis deformans among them, she is unique indeed. I have recently analyzed a considerable group of cases in California. These patients came from nearly every state in the Union, and the percentage of contribution from each state was much the same. When these infections are severe enough to produce toxin *en masse*, the case is then an entity demonstrable both by clinical and by laboratory means. I cannot agree that methylene blue has much efficacy in the treatment of *Chilomastix* and *Trichomonas* infestation. I agree with Dr. Castellani that it generally takes months of treatment

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2. Barrow, J. V.: A Clinical Study of Intestinal Protozoa, Am. J. Trop. Med. 4: 23 (Jan.) 1924.

to accomplish very much. As the disease is chronic, so also must be its treatment.

Dr. Louis A. Buie, Rochester, Minn.: Dr. Lynch has referred to a group of cases in which he was able to demonstrate a condition which he terms "colitis," and he has been able to confirm the presence of this condition with proctoscope and roentgen ray. I have had the opportunity to examine a number of people who have had this flagellate infestation, and I have never been able to identify anything which I would characterize as colitis. I should therefore like to have Dr. Lynch advise us as to the evidence he has especially on proctoscopic examination which leads him to believe that there is a "colitis" present.

Dr. W. S. Thomas, Clifton Spring, N. Y.: We have examined approximately 6,000 specimens. Our figures agree rather well with those of Dr. Lynch, except that the figures on *Trichomonas* and *Chilomastix* infestation are reversed. We find more *Chilomastix* than *Trichomonas*. We have tried to show that the flagellates have some bearing on the condition from which these patients suffer when they come to us, but up to the present time have not been able to attribute any of the symptoms to flagellates. This holds for *Giardia* as well as for *Trichomonas*. We have tried various methods of treatment and have been unsuccessful in all of them. We have not tried mercurochrome in *Giardia*. We have thought at times that we could cure *Giardia* infestation, but by following them over a long period of time we invariably found a reappearance of the cysts. We have no evidence that flagellates cause disease.

Dr. M. D. Levy, Houston, Texas: In our part of the country the cases of flagellate infestation seem not to be associated with arthritis deformans. Among 250 cases seen in Galveston, I do not recall a single case of arthritis deformans that showed flagellate infestation. We have tried practically all treatment mentioned. Boyd noted cultures of *Trichomonas* in the stool only when bile was absent. Acting on that suggestion, we tried to increase the flow of bile through the intestine by giving hydrochloric acid in capsules. However, our experience has not borne out first conclusions. The effect of calomel in the cases Dr. Castellani mentioned may have been due somewhat to bile concentration. Recently a technician suggested to me the use of calomel in combination with arsphenamine by the transduodenal route. I have not had the opportunity of using this treatment.

Dr. Frank Smithies, Chicago: I am convinced that chronic protozoiasis, as it exists in residents in the temperate zone, is different in symptomatology and effects in the intestine from the "carrier type" of protozoiasis as seen in persons who live in warm climates. That flagellates can cause diarrhea is proved by Epstein's studies on children and the effects of experimental work on laboratory animals. As Dr. Castellani mentioned, when there is massive infestation of *Trichomonas* in a person who is not accustomed to harboring these organisms in his alimentary tract from birth, symptoms demanding treatment result. The native of the South who harbors flagellates chronically is similar to the typhoid carrier: he does not have the disease, but he is rarely free from some dysfunction. While these patients develop a certain type of local immunity, they are dangerous to others not so well able to resist. Northerners who get an acute infestation do not develop that immunity and become sick. We believe that a number of these persons carry the protozoan in their biliary tracts. Dr. Oleson and I have on record thirty-two cases in which we have recovered by duodenal drainage various protozoa and, on one occasion, viable hookworms. We believe that the biliary tract is a point of focal infestation from which, from time to time, there are recurrences. If a person has an ulcerative lesion in the colon, if he is of "cancer age," and has these living, traumatizing organisms present in his bowel for a number of years, there is a distinct liability to the development of malignant disease. We have followed seven persons from four to eleven years. They had infestations with flagellates, had chronic ulcerative colitis, and eventually died from carcinoma of the colon. Thus, it becomes evident that in temperate zone patients it is our duty to get rid of the flagellates early. About thirteen years ago, I suggested massive doses of calomel as treatment for flagellates. I still believe that this treatment not only gets rid of flagellates but exerts a beneficial effect on the coincident rich bacterial flora. We starve the patient for three days and give from 5 to 15 grains (0.3 to 1 Gm.) of calomel in one dose in the evening and then follow it by a saline the next morning. We repeat this dose every five days for three treatments. Patients in whom there remains such a troublesome parasite as *Giardia* receive a dose of calomel once every two or three weeks, or even a month, for a year. Patients who are unusually resistant may be treated successfully by properly controlled doses of thymol, from 60 to 90 grains (4 to 6 Gm.), followed by a saline in six hours. But we cannot hope not to have a recurrence in persons whose appendix or gallbladder harbor flagellates year after year. Surgical removal is often needed. In regard to actual injury in the colon, I believe that none of the flagellates, with the possible exception of *Giardia*, ever produce ulceration. When flagellates are found in the ulcerations of the large bowel, the ulcers have been in there from some previously existing cause, probably infection, and the finding of the flagellates is accidental and represents only the fact that flagellates are able to live in the presence of partly devitalized or actually dead tissue.

Dr. Sidney K. Simon, New Orleans: I believe that a great deal of agitation in regard to flagellate intestinal infestation represents much ado about nothing. It has been my experience that flagellate infestation, especially in this part of the world, is rather a common affair. Our records show that more than 8 per cent of the stools examined by us in a routine manner showed *Giardia* infestation. Not 0.5 per cent of those persons have any intestinal disturbance at all. Of course, that is not definite proof of the pathogenicity of the organ, but still from other observations that we have made I think it is far fetched to say that no protozoan organism is capable of entering the bowel wall itself; that it is incapable of penetrating the wall, boring into the tissue. I think it is safe to say that the pathogenicity of that particular organ is of low grade. It is thinkable that a toxin might be secreted by the organism and that mechanical irritation in the intestinal mucosa may be present in enormous quanity in the organism which may produce a very mild degree of irritation and pathogenicity. In regard to the treatment, I must confess I am a great skeptic. I have tried out almost all the plans suggested in the literature. Several years ago I said that I thought we had arrived at a definite basis of treatment with intraduodenal injection or instillation of arsphenamine. We had a series of about twenty-five cases with apparently good results. But, as has been the case in many instances, the cure was only apparent, not absolute. After testing out the stools a number of times for the presence of flagellates, and finding them absent, we considered the patient cured; but on subsequent examinations, especially after the use of large doses of calomel, and so forth, they showed recurrence of the infestation. I am skeptical about all forms of treatment suggested.

Dr. Kenneth M. Lynch, Dallas, Texas: Dr. Castellani emphasized an important point, which I have been making for several years, that we must make our studies more specific. While this paper is a discussion of the flagellates as a group, the study carries the proposal to make an analysis in relation to species. As to the importance of numbers, mentioned by Dr. Castellani and Dr. Smithies, when are the numbers in the stool representative of the numbers in the intestine? We know that in the same person they may not appear at one time, and again they may be found in showers, particularly after taking a purgative. They increase rapidly in this fluid medium, perhaps even after passage. Dr. Castellani mentioned that all flagellates except *Giardia* (if not *Giardia* as well) are intestinal lumen dwellers. To go into a discussion of the systemic effects of such lumen dwellers and of such symptoms as leg weakness and headache leads us into a field of pure conjecture. We know nothing about whether they give rise to a poison or, if they do, whether it is absorbed. As to treatment, I have not considered that in my paper.

Hegner's protein diet has not come up to expectations with us. There are a number of drugs, mercurochrome for instance, which will kill intestinal flagellates. For that matter, water will kill *Chilomastix* trophozoites. The problem is to get in contact with them. In regard to the effect of the arsphenamines, I have kept *Trichomonas* and *Chilomastix* alive for considerable periods of time in solutions of greater strength than I would expect to be introduced into the cecum therapeutically. Dr. Smithies discussed their habitat. From human and other animal necropsies I think of the main habitat of *Chilomastix* and *Trichomonas* as the cecum and first part of the colon, perhaps extending, at times, for a short distance into the lower ileum. *Giardia* we think of as a duodenal dweller. Dr. Buie asked about the diagnosis of colitis. Any diagnosis given in this study is, I suppose, subject to the well known error of all such clinical diagnoses, even in the best of hands. Dr. Simon calls the problem much ado about nothing, but the prominence given it is growing. We must have this in mind; we must go back to fundamentals and have better controlled studies than in the past.

PRACTICAL CONSIDERATIONS OF RENAL PHYSIOLOGY AND FUNCTION

THEIR APPLICATION TO THE MANAGEMENT OF NEPHRITIS *

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The functions of the kidney can be readily outlined. Regarding renal physiology, however, such a great mass of apparently contradictory data has accumulated that various opposing theories of the modus operandi have been advanced. This has resulted from the fact, as Richards [1] has stated, that the intricacy of the structure of the kidney and its compactness of mass have prevented the development of analytic experiments of compelling force. Concomitant with and resulting from these studies of renal physiology and function, many tests have been elaborated for the purpose of exposing the inability of the kidney to carry out one or more of its several functions. A brief survey may be useful to differentiate such knowledge of practical importance to clinical medicine from that of less direct or only theoretical bearing.

FUNCTIONS OF THE KIDNEY

There are four established functions of the kidney: (1) the excretion of certain nonvolatile end-products of metabolism; these products reach the kidney in a preformed state and are for the most part débris of protein or tissue catabolism, urea, uric acid, creatinine, and so forth; (2) the regulation of the body economy for water and salts; the osmotic pressure of the blood depends largely on the maintenance of water balance and salt content; the variations in the amount and specific gravity of the urine are reflections of such regulation; (3) the maintenance in part of the acid-base equilibrium of the body by the excretory power of the kidney, and (4) the synthesis of hippuric acid and possibly a small part of the urinary ammonia.

In general, therefore, the function of the kidney is almost entirely excretory in character. It separates from blood substances carried to it which are injurious to the body and excretes them in the urine, at the same time preventing the undue elimination of food products and other vital substances. Thus it is of prime importance in maintaining the constant "milieu interieur" so essential to normal bodily activity.

THEORIES ON RENAL PHYSIOLOGY

Two main theories have prevailed regarding the manner whereby the functions are carried out, the "vital" and the "mechanistic." Experimental data in support of both views are abundant. A brief summary of this development and a comparison of them is given by schema.

Bowman's [2] observations, in 1842, based entirely on anatomic studies, led him to believe that renal function was carried on by secretion of "water from glomeruli to aid in the separation and solution of uriniferous products from the epithelium of the tube."

Ludwig,[2] however, in 1844, advanced the theory that secretion, a "vital process," was not a property of renal tissue but that excretion was carried on by purely mechanical processes. A protein-free filtrate containing blood crystalloids in the proportion in which they exist free in the blood is excreted by physical osmotic pressure through the glomeruli, and large amounts of water, and Ludwig later included some solids which are reabsorbed by the tubules by simple diffusion.

Heidenhain,[2] in 1874, revived the Bowman theory by his physiologic studies. He maintained that the "vital" property of secretion was present both in the glomerulus and in the tubule; that water and salt were actually secreted, not excreted by mechanical filtration through the glomeruli, and that urea, uric acid and other products were added to the glomerular secretion by the secretory power of the renal tubular cells.

Cushny,[3] in attempting to reconcile apparently conflicting data, evolved the "modern theory," ascribing purely mechanical methods to the glomerulus but active vital properties to the tubular cells. A deproteinized plasma which included useful substances, sugar, chlorides, amino-acids, as well as waste products, urea, uric acid, and so forth, is mechanically filtered from the glomeruli. The useful substances are reabsorbed by the cells lining the tubules, including most of the water and chlorides which are filtered through the glomeruli but which the body cannot afford to lose. The advantage of the "modern view" of Cushny was that it "reduced the kidney to a machine instead of postulating for it the capacity of a highly trained analytic chemist. One part filters off the plasma colloids, another part absorbs a fluid of unchanging composition (Locke-Ringer solution). The kidney exercises no discrimination but continues these activities through life."

The recent work of Starling and Verney [4] on the kidneys of dogs supports the filtration-reabsorption idea of Cushny but indicates also the secretion of substances into the tubule, including the further addition of urea, also excreted from the glomeruli. Wearn and Richards,[5] by direct catheterization and analysis of glomerular urine of frogs, and comparison with simultaneous collections of bladder urine, found that a protein-free watery fluid containing sugar was filtered through the glomerulus, but that certain of the substances of the filtrate were reabsorbed with different thresholds by the tubular cells.

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* From the Division of Medicine, Mayo Clinic and the Mayo Foundation.

* Read before the Section on Practice of Medicine at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[1] Richards, A. N.: Kidney Function, Am. J. M. Sc. **163**: 1-19 (Jan.) 1922.

[2] Quoted by Richards (footnote 1).

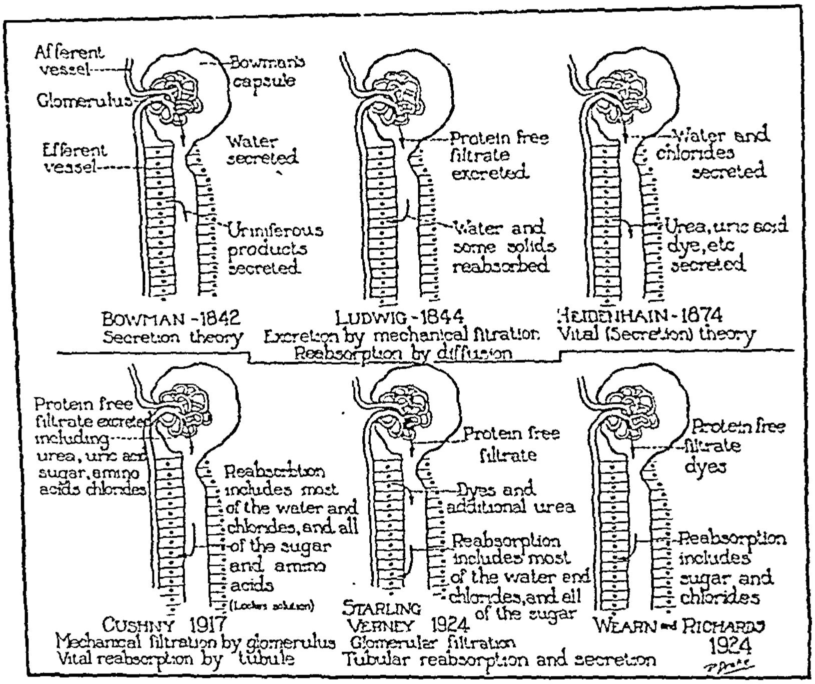
[3] Cushny, A. R.: The Secretion of Urine, London, Longmans, Green & Co., 1917.

[4] Starling, E. H., and Verney, E. B.: The Secretion of Urine as Studied on the Isolated Kidney, Proc. Roy. Soc. London, B **97**: 321-363, 1924-1925.

[5] Wearn, J. T., and Richards, A. N.: Observations on the Composition of Glomerular Urine, with Particular Reference to the Problem of Reabsorption on the Renal Tubules, Am. J. Physiol. **71**: 209-227, 1924-1925.

Regarding the elimination of dyes (indigo carmine, phenolsulphonphthalein), controversial opinion also exists. Heidenhain saw indigo carmine apparently in the tubules only, with colored granules in the epithelial cells of the tubules, and based his contention regarding the secretory power of these cells on this observation. Rowntree and Geraghty[6] believed that phenolsulphonphthalein was excreted mostly by the tubules. Cushny believed that these dyes are almost entirely excreted by the glomeruli, and concentrated in the tubules during reabsorption. Starling and Verney give evidence to indicate that such dyes are secreted by the tubules. Wearn and Richards, however, actually found small amounts of dyes excreted from glomeruli which then apparently became more prominent in the tubules because of concentration resulting from reabsorption of water. Bieter and Hirschfelder,[7] using Richards' technic, concluded that no dye is secreted by tubules, but that all comes through the glomeruli. Marshall and his co-workers,[8] however, believe that phenolsulphonphthalein is actively secreted by the tubules of the mammalian kidney.

Summarizing the various theories would lead to the present acceptance of the belief that mechanical filtration of a protein-free fluid occurs through the glomeruli, and that this filtrate is further elaborated into urine by the action of the tubules through a process either of reabsorption alone or of *reabsorption plus active secretion.*


Afferent vessel
Glomerulus
Bowman's capsule
Efferent vessel
Water secreted
Uriniferous products secreted
BOWMAN-1842
Secretion theory
Protein free filtrate excreted
Water and some solids reabsorbed
LUDWIG-1844
Excretion by mechanical filtration
Reabsorption by diffusion
Water and chlorides secreted
Urea, uric acid dye, etc secreted
HEIDENHAIN-1874
Vital (Secretion) theory
Protein free filtrate excreted including urea, uric acid sugar, amino acids chlorides
Reabsorption includes most of the water and chlorides, and all of the sugar and amino acids
(Locke's solution)
CUSHNY 1917
Mechanical filtration by glomerulus
Vital reabsorption by tubule
Protein free filtrate
Dyes and additional urea
Reabsorption includes most of the water and chlorides, and all of the sugar
STARLING VERNEY 1924
Glomerular filtration
Tubular reabsorption and secretion
Protein free filtrate dyes
Reabsorption includes sugar and chlorides
WEARN and RICHARDS 1924

Schematic representation of various studies on renal physiology.

APPLICATION OF PHYSIOLOGIC KNOWLEDGE

The differential diagnosis of various renal lesions would be greatly simplified were one able to bring such physiologic data into direct relationship with the pathologic findings. One would like to infer that albuminuria would always designate primary glomerular, not tubular, injury. If urea is entirely excreted through glomeruli, one might infer that nitrogen retention would occur only with interference with glomerular function, and that tubular disease could not be associated with albuminuria or urea retention but with interference mainly in the elimination of water and chloride. If in tubular disease there is interference with reabsorption of water and chlorides, dehydration should result. Edema, on the other hand, could be explained on the basis of irritation of the tubular cells resulting in an increased reabsorption of water and chlorides; by interference with mechanical filtration of water by glomeruli, which one would suppose should be accompanied by urea retention, or, as Epstein[9] has suggested, by a tissue affinity for water and salt, on account of changes in the osmotic force of the blood, whereby edema fluid does not reach the kidney for elimination.

It is obvious that no such general inferences can be drawn. Although renal lesions do pathologically quite frequently run true to these supposed physiologic conceptions, so many *exceptions occur* that pathologic prognostications cannot be made categorically from the clinical picture. For example, the pathologic findings associated with experimental or clinical mercury nephritis (nephrosis) are almost, if not entirely, tubular, not glomerular, and yet marked retention of nitrogen occurs. In other instances, marked glomerular injury will be found, with very little retention of nitrogen but with outstanding edema.

No distinct separation of renal lesions can therefore be expected. In a great many cases the renal lesions are diffuse and involve all renal structures. Furthermore, every glomerulus destroyed eventually probably implicates its corresponding tubule in degeneration (nephrosis). Hence, all nephritis will command a degree of nephrosis, although the reverse is not necessarily to be expected. Temporary nonfunction of a glomerulus as well as organic disease probably also effects changes in tubular function. Invisible pathologic lesions must play a part. Indeed, the only clinical evidence during life that the tubules are ever involved is the appearance of glomerular epithelial casts with more or less detritus of the cells of the tubules.

Cushny expresses the belief that "the invisible lesion of the glomerular capsule plays a much more important rôle than is often assigned to it," and that when albuminuria exists, the primary lesion seems to be in the capsule.

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[6] Rowntree, L. G., and Geraghty, J. T.: The Phthalein Test: An Experimental and Clinical Study of Phenolsulphonephthalein in Relation to Renal Function in Health and Disease, Arch. Int. Med. **9**: 284-338 (March) 1912.

[7] Bieter, R. N., and Hirschfelder, A. D.: The Excretion of Dyes and Other Substances in the Frog's Kidney and Its Bearing upon the Theories of Renal Secretion, Am. J. Physiol. **68**: 326-337 (April) 1924.

[8] Marshall, E. K., and Vickers, J. L.: Mechanism of Elimination of [illegible] Kidney Proof of Secretion of Convoluted Tubule [illegible] Hosp. **34**: 1-7 (Jan.) 1923. Marshall, E. K., [illegible]: The Secretory Function of the Renal Tubules, Am. J. Physiol. **70**: 465-488 (Nov.) 1924. Edwards, J. G., and Marshall, E. K.: Microscopic Observations of the Living Kidney After the Injection of Phenolsulphonephthalein, ibid. **70**: 489-495 (Nov.) 1924.

[9] Epstein, A. A.: Concerning the Causation of Edema in Chronic Parenchymatous Nephritis: Methods for Its Alleviation, Am. J. M. Sc. **154**: 638-647 (Nov.) 1917; The Nature and Treatment of Chronic Parenchymatous Nephritis (Nephrosis), J. A. M. A. **69**: 444-449 (Aug. 11) 1917; Further Observations on the Nature and Treatment of Chronic Nephrosis, Am. J. M. Sc. **163**: 167-186 (Feb.) 1922; Clinical Course and Therapeutic Management of Chronic Nephrosis, M. Clin. N. Amer. **5**: 1067-1079 (Jan.) 1922.

Although confusion may result from an attempt to correlate physiologic conceptions, clinical syndromes and pathologic data in this way, the clinician can, from the standpoint of practice, honestly sidestep such confusion by a consideration purely of the clinical picture. By the use of a few simple clinical observations and a few readily available laboratory procedures, a sufficiently correct differentiation of the type of renal lesion present can be made, and with it direct indications for treatment and prognosis can be ascertained.

FREQUENCY AND SIGNIFICANCE OF ALBUMINURIA

Albuminuria is the most readily detected aberration of normal renal function. Five per cent of 60,000 healthy soldiers[10] and a similar proportion of 5,000 healthy students[11] presented this abnormality. Its incidence is much greater in those who are, or consider themselves, unhealthy and come to a physician. In a study at the Mayo Clinic by Sanford, Conner, Magath and Heck,[12] an analysis of urine by three different tests for albumin showed that 56 per cent were positive by one or more tests and 33 per cent were positive with all tests. Furthermore, in 39 per cent of 663 consecutive cases there was albumin in the first specimen analyzed. However, definite renal lesions were present in less than half (40 per cent) of the 39 per cent in which albumin was found.

The first question to be determined, therefore, is the diagnostic relationship of albuminuria to nephritis. So-called functional albuminuria of various kinds includes mainly that appearing in healthy persons after exercise or exposure to cold, and that associated with posture called orthostatic albuminuria, recently considered to be unilateral albuminuria[13] resulting from pressure on the left renal vein. Occasionally, albuminuria of nonrenal origin may be found to be due entirely to prostatitis. Pyelitis and surgical lesions producing albumin with pus are rarely to be confused with albuminuria due to bilateral nonsuppurative nephritis. Functional or surgical albuminuria can be excluded by the lack of an appropriate history, the absence of other signs, except albumin, of renal insufficiency, negative roentgenologic study of the kidney, or a negative test for orthostatic albumin.

If the albuminuria is of true renal origin, the next question is whether it indicates outspoken Bright's disease or a minor type of medical renal lesion. Such a consideration is of utmost importance. Following Bright's[14] original observations on albuminuria and the pathologic changes in the kidney, the disease by the very strength of his clinical and necropsy data was considered therapeutically almost hopeless. Then began the era when albuminuria doomed many comparatively healthy persons to the fear of an early death. So indiscriminately was dire prognosis made on this evidence that Bright wrote his second paper,[15] mainly for the purpose of correcting this misconception. He tried to modify the general pessimistic view by stating in his conclusion that "the disease on which the secretion of albuminous urine depends is in the commencement functional, that as long as it continues in this state it is capable of cure or of relief by various means."

Barlow[16] and Rees,[17] the chemical colleagues of Bright, further softened the sting of albuminuria by their careful analyses. Rees said, "It is interesting to observe how supposed exceptions to the law declared by Dr. Bright become explained away by advances in the chemical pathology of the urine." They further extended the laboratory data necessary for a diagnosis of morbus Brighti to include not only the heat test but also the nitric acid test.

It is of interest to note in Bright's memoirs the generous expressions of gratitude that he makes for the enthusiastic cooperation of several colleagues, notably Babington, Barlow and Rees. An intensive study of the disease that bears Bright's name was instigated by him in conjunction with this group of well trained young physicians. When his own pathologic and clinical knowledge was lacking, he called the chemically trained physicians Babington and Rees to his aid; for clinical confirmation, Barlow was invaluable. Rowntree has called attention to this as one of the foremost instances of a "master" developing group medicine for the purpose of comprehensive study of a new disease. That his encouragement bore ample fruit was shown by the work of Babington, who first analyzed the blood into red corpuscles and "liquor sanguinis" and who, by the way, also invented the laryngoscope; of Barlow, a keen cardiologist who studied particularly the enlargement of the heart in Bright's cases of renal disease; and of Rees who, undertaking the analysis of secretions in certain diseases, especially of the kidney, first proved the presence of urea in blood, milk and other secretions, and who also established the hitherto doubted presence of sugar in the blood in cases of diabetes.

The studies of renal physiology and the development of many accurate tests of renal function have further extended our knowledge of the character of true Bright's disease, as well as the supposed exceptions. Albuminuria, therefore, is no longer universally interpreted as Bright's disease, but merely as a sign-post which may point to diverse pathologic manifestations. For the practitioner, however, albumin and casts in the urine are the usual criteria for a diagnosis of nephritis, and albuminuria has in general retained its original evil heritage in diagnosis and prognosis. This is probably somewhat fortunate, as it has led to prophylactic measures and conservative treatment, even though sometimes unwarranted and often excessively rigid. The differentiation of significant and insignificant forms of albuminuria can be made only by a careful analysis of readily available clinical and laboratory data.

TYPES OF NEPHRITIS

Billings,[18] in his analysis of the minimal needs for "the resourceful general practitioner of modern medicine," has made a forceful plea for simple tests of function and simple classifications of renal lesions. Clinical classifications, if they lack clean-cut delineations, are odious. In individual cases such clarity is not always obtainable, but Volhard and Fahr's[19] classification probably is most useful and modern. It is briefly compared with two other widely used simple classifications (table 1).

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[10] Maclean, H.: The Incidence of Albuminuria and Casts in British Soldiers During Training and the Relationship of This Condition to War Nephritis, Brit. M. J. **1**: 94-98 (Jan. 25) 1919.

[11] Lee, R. I.: Albuminuria in Young Men, M. Clin. N. Amer. **3**: 1059-1063 (Jan.) 1920.

[12] Sanford, A. H.; Conner, H. M.; Magath, T. B., and Heck, F. J.: The Significance of Slight Albuminuria, Collected Papers of the Mayo Clinic, Philadelphia, W. B. Saunders Company **13**: 308-337, 1921.

[13] Rieser, Willy; and Rieser, S. L.: The Etiology of Orthostatic Albuminuria, J. A. M. A. **78**: 644-647 (March 4) 1922. Weber, F. P.: A Fatal Case of Emaciation in a Girl at About the Period of Puberty, with General Visceroptosis, Hypotonicity of the Stomach and Achylia Gastrica, Brit. J. Dis. Child. **18, 19**: 75-83, 1921-1922.

[14] Bright, Richard: Cases and Observations Illustrative of Renal Disease Accompanied with the Secretion of Albuminous Urine, I, Guy's Hosp. Rep. **1**: 338-400, 1836.

[15] Bright, Richard: Cases and Observations Illustrative of Renal Disease Accompanied with the Secretion of Albuminous Urine, II, Guy's Hosp. Rep. **5**: 101-161, 1840.

[16] Barlow, S. H.: Remarks on Certain Specimens of Urine Imitating Albuminous Urine, Guy's Hosp. Rep. **1**: 401-402, 1836.

[17] Rees, G. O.: Observations on Real and Supposed Pathological Conditions of the Urine, Guy's Hosp. Rep. **6**: 121-130, 1841.

[18] Billings, Frank: The Resourceful General Practitioner of Modern Medicine, J. A. M. A. **80**: 519-524 (Feb. 24) 1923.

Acute Nephritis.—Acute nephritis needs but little discussion. The acute nature of its onset with the findings of hematuria, albumin and casts, associated with edema or retention of nitrogen, or both, is characteristic. Even with serious symptoms it may clear up fairly rapidly. Of course, certain cases become chronic.

Table 1.—*Comparative Classification in Nephritis*

Volhard and Fahr (Clinical and Pathologic)	Christian (Clinical)	Widal and Javal (Functional)
Acute	Acute	Acute and chronic
(a) Diffuse glomerular		
(b) Focal glomerular		
(c) Nephrosis (tubular)		
Chronic nephritis	Chronic	
(a) Chronic diffuse glomerular nephritis, early chronic or late terminal	(a) With vascular hypertension	(a) Azotemic
(b) Chronic nephrosis (tubular)	(b) With edema	(b) Chloremic
(c) Mixed, a and b	(c) Mixed or combined type	(c) Mixed
(d) Chronic focal	(d) Renal arteriosclerosis progressing to chronic nephritis	
(e) Arteriosclerotic nephritis; nephritis secondary to vascular change	(e) Essential vascular hypertension progressing to chronic nephritis	
(f) Chronic diffuse glomerular secondary to malignant sclerosis, giving same renal picture as (a)		

Of the chronic nephritides of Volhard and Fahr, the diffuse glomerular and the tubular form (nephrosis) may be serious and may deserve most careful treatment and a guarded prognosis. The chronic focal and the vascular form are generally much less serious (table 2).

Chronic Glomerular Nephritis.—It will be seen that chronic glomerular nephritis is true Bright's disease and is really a systemic disease, not exclusively a primary renal lesion. It is probably a widespread vascular disease affecting the capillaries and smaller vessels not only of glomeruli, but also of the heart, periphery (as seen in the nail-beds by the Lombard method) and eyegrounds, with involvement also of bone marrow and the production of hypoplastic anemia. The demonstration of these other lesions is of great aid in separating this graver form of nephritis from all the others. Without some or all of these associated lesions, especially elevated blood pressure, such a diagnosis should not be frankly made.

Chronic Nephrosis.—Chronic nephrosis is chiefly demonstrated by edema and albuminuria, without systemic manifestations. A dry type (albuminuria without edema) is frequently seen as a residuum of an acute infection and is present merely as a postinfectious albuminuria with practically no other signs of renal insufficiency. Nephrosis and chronic glomerular nephritis may occur alone in pure type, although often, in the progression of either type, manifestations of the other forms appear and a mixed type results.

Focal Nephritis.—Focal nephritis is so called because it is generally considered to be caused by focal infection elsewhere, such as infected teeth or tonsils, or, more rarely, manifest infection, such as endocarditis. The only positive findings are generally albumin, erythrocytes, and at times casts in the urine. Systemic evidence of renal insufficiency is absent. The exact pathologic changes have not been determined, but are supposed to consist of scattered areas of infection in glomeruli. Following removal of distant foci, this often clears up entirely. No restrictions of diet are necessary, although careful observations should be made for a year or two to verify the comparatively innocent nature of the lesion.

Arteriosclerotic Nephritis.—Arteriosclerotic nephritis is generally a more or less incidental finding associated with arteriosclerosis of primary or secondary type. In most cases it eventually manifests itself merely as a mild albuminuria with nocturia, a slight degree of retention of nitrogen or phenolsulphonphthalein, and a rather slowly progressive and comparatively benign type of renal insufficiency. A greater degree of renal insufficiency may result from the more severe form of arteriosclerotic nephritis which occurs as a terminal event in cases of essential hypertension, in which the hypertension is primary and the renal vessels participate in the resulting arteriosclerosis.

For the development of clinical acumen and for more careful treatment it is very desirable to separate these forms of chronic nephritis. This may usually be done by a careful physical examination (with special attention to the presence or absence of increased blood pressure, cardiac enlargement, anemia and changes in the eyegrounds) and by a search for disturbances in renal function, the existence of which can be demonstrated by the use of five simple tests that can be carried out by any practitioner.

MAXIMAL INFORMATION OBTAINED FROM SIMPLE TESTS OF FUNCTION

Certain simple functional tests will show whether nitrogen is being retained, the degree of interference with the excretion of water and salt, and the degree of the systemic involvement. This is all that is practically necessary, and can be accomplished by: (1) the phenolsulphonphthalein test; (2) the water (dilution) test; (3) the concentration test; (4) the determination of urea retention by means of the estimation of the mercury combining-power of the blood or of the saliva (the salivary urea index), and (5) the determination of the hemoglobin percentage and the number of erythrocytes. The first three tests are well known and will be but briefly mentioned.

Table 2.—*Differential Diagnosis in Nephritis (Volhard and Fahr)*

Type	Urine	Water and Salt Retention; That Is, Peripheral Edema	Blood	Systemic Changes
Chronic diffuse glomerular nephritis	Albumin, casts, specific gravity fixed or low, erythrocytes present or absent	+ or 0	Moderate to marked retention of nitrogen and dyes	Blood pressure ++; anemia ++; heart enlarged; eyeground changes
Chronic nephrosis	Albumin, casts, specific gravity high	Usually + or ++	Normal	Absent
Focal nephritis	Erythrocytes, albumin or casts	Rare	Normal	Absent
Arteriosclerotic nephritis	Albumin, trace; specific gravity fixed or low	Generally only with cardiac failure	Mild retention, if any	Moderately present as compared to chronic glomerular

The Phenolsulphonphthalein Test.[6]—This was one of the first practical tests of renal function, and remains probably the most widely used. The dye may be given intravenously or intramuscularly. Normally there should be a return of from 50 to 60 per cent in the urine collected for two hours and fifteen minutes after intravenous injection. After intramuscular injection, a return of from 40 to 60 per cent in the urine collected for two hours and fifteen minutes is considered normal.

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[19] Volhard, F.: Die doppelseitigen hämatogenen Nierenerkrankungen (Bright'sche Krankheit), Berlin, Springer, 1918.

Water (Dilution) Test.[19]—At 8 o'clock in the morning, 1,500 cc. of water is given on an empty stomach. Urine is collected at half-hour intervals for the next four hours. The normal output in this period varies between 1,200 and 1,800 cc.; the specific gravity should at least drop as low as 1.003.

The Concentration Test.[19]—The patient is given a diet for one day consisting of solid food only; no fluids are given. The urine is collected at three-hour intervals. The specific gravity should approach 1.030.

The water and concentration tests devised by Volhard and Fahr may possibly indicate the reserve excretory powers of the kidney. If there is a fixation of specific gravity (1.015 or below) in the absence of edema, it is a direct indication for forcing fluids, or at least for keeping up an intake adequate to prevent retention of nitrogen.

The Mercury Combining-Power of Saliva (the Salivary Index) and of Blood.—The determination of the presence or absence of retained nitrogenous bodies in the blood is of great importance in indicating proper treatment. These metabolites are mainly urea, uric acid and creatinine. Uric acid is increased in the blood probably before urea. Its relation to renal injury is not entirely understood, possibly on account of errors of method. Retention of creatinine gives more information in chronic renal disease with regard to the severity of the renal injury and life expectancy, as it generally occurs only with extensive renal destruction. However, from the practical standpoint, the determination of the blood urea generally gives the greatest amount of information. Although its determination is simple in the hands of the laboratory worker, it is hardly within the realm of the general practitioner. Therefore, the determination of the mercury combining-power of blood or of saliva, which may be made readily within ten or fifteen minutes with a minimum of laboratory apparatus and which gives the same information, is especially suitable for routine office work. The technic for determination of the mercury combining-power of saliva (the salivary index) and of blood has been fully described elsewhere by Hench and Aldrich.[20] In brief outline, the principle is as follows:

> The methods are based on the principle that mercury combines with such products as urea, creatinine and uric acid, when a solution of a mercuric salt is added to a solution containing these nitrogenous products. As mercury is added, combination continues until the mercury combining-power of the solution is satisfied, after which excess mercury appears in the solution. The excess mercury is readily detected by adding a drop of the solution to be tested to a drop of saturated solution of sodium carbonate on a white spot-plate. A dark reddish brown precipitate (the end-point) indicates the presence of excess mercury. The method may be applied to a protein-free blood filtrate obtained by the use of trichloracetic acid, or directly to saliva. By means of a very simple formula, the probable blood urea may be estimated from the mercury combining-power of blood or saliva. When urea is retained in the body there is an increase in the salivary urea proportionate to the rise in the blood urea.[21] Both in saliva and in protein-free blood filtrate, urea is the dominating mercury-combining element, and the mercury combining-power of these substances will vary primarily with changes in the concentration of the blood urea.

Anemia.—The estimation of the erythrocytes and hemoglobin is of importance from the standpoint not only of differential diagnosis but also of prognosis. As already noted, anemia of definite grade is characteristic of chronic diffuse glomerular nephritis. Brown and Roth[22] have pointed out that it is a hypoplastic anemia which may develop from four to six weeks after the onset of renal insufficiency. The tardiness of onset of the anemia is explained on the basis of decreased formation of erythrocytes. The erythrocytes in circulation at the time of the onset of the renal "break" are not affected, and therefore it is only when they are not replaced as effectively as they should be that anemia begins to appear. Bone marrow recovers its function slowly, depending to a large extent on the severity of its injury. After repeated injuries to the bone marrow, anemia becomes more severe and takes on certain characteristics of a definite hypoplastic or aplastic type. By definite anemia is meant an erythrocyte count below 4,000,000, or a Dare hemoglobin value below 70 per cent. The blotting-paper method of Tallqvist is hardly accurate enough in this instance. The presence and degree of definite anemia are not only of importance in pointing to the differential diagnosis of the chronic glomerular type of nephritis, but also of prognostic importance, as will be noted.

INFORMATION REGARDING PROGNOSIS

In prognosis, as in diagnosis, functional tests are of great value as an adjunct to a careful physical examination. A grave prognosis in cases of chronic nephritis is indicated by various findings: (1) a consistently high level of blood urea or a continued low excretion (5 per cent or less) of phenolsulphonphthalein in the urine in two hours; (2) the presence of the characteristic neuroretinitis of chronic glomerular nephritis; (3) the presence of myocardial injury with significant changes in the electrocardiogram,[23] and (4) the maintenance of a high level of blood creatinine (from 5 to 7 mg. or more for each 100 cc.).[24] Life expectancy is generally limited to a few months when such findings are present. Unfortunately, as Brown and Roth have noted, these valuable indications cannot always be investigated because of the technical skill required. The mercury combining-power of blood or saliva can now be determined when blood urea cannot. Furthermore, the estimation of the hemoglobin and the number of erythrocytes will afford prognostic information similar to that of creatinine determinations; Brown and Roth[25] found a parallelism between the mortality rates in cases of nephritis with definite anemia (in the absence of gross hemorrhage) and those with retention of creatinine. When moderate anemia was present (hemoglobin between 50 and 70 per cent), the mortality rate within a period of two and a half years was 46 per cent. In the group with severe anemia (below 50 per cent hemoglobin) the mortality rate was 85 per cent in two and a half years.

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[20] Hench, P. S., and Aldrich, Martha: A Salivary Index to Renal Function, J. A. M. A. **81:** 1997-2003 (Dec. 15) 1923; Apparatus for the Determination of the Salivary Urea Index, ibid. **82:** 1194-1195 (April 12) 1924; The Mercury Combining-Power of Deproteinized Blood, Proc. Soc. Exper. Biol. & Med. **22:** 556-558, 1924-1925; The Mercury Combining Power of Blood: A Simple Method for Estimating Urea Retention, to be published.

[21] Hench, P. S., and Aldrich, Martha: The Concentration of Urea in Saliva, J. A. M. A. **79:** 1409-1412 (Oct. 21) 1922.

[22] Brown, G. E., and Roth, Grace M.: The Anemia of Chronic Nephritis, Arch. Int. Med. **30:** 817-840 (Dec.) 1922.

[23] Willius, F. A.: *Electrocardiography* and Prognosis, Arch. Int. Med. **30:** *434-450 (Oct.) 1922.*

[24] Meyers, V. C., and Killian, J. A.: The Prognostic Value of the Creatinine of the Blood in Nephritis, Am. J. M. Sc. **167:** *674-695, 1919.*

[25] Brown, G. E., and Roth, Grace M.: Prognostic Value of Anemia in Chronic Glomerular Nephritis, J. A. M. A. **81:** 1948-1950 (Dec. 8) 1923.

TREATMENT

Scientific treatment depends on the recognition of the types of functional disturbances present. Although the clinical and pathologic classification may not be clear in the individual case and may have to be disregarded, a functional classification must be attempted. The treatment of nephritis is not a "routine" one, but must be individualized. Best results can be obtained only by determining, by tests, the individual functional capacity of each patient. One of two main functional disturbances is present during the periods of insufficiency. First, the retention of nitrogenous products in the body and, second, the retention of salts and water; in diffuse renal lesions, both phenomena may be observed. In cases of chronic nephritis, the administration of a milk diet of from 2 to 4 quarts daily as a routine is not scientific treatment. If urea is being retained, such a diet includes too much protein; if edema is present, it contains too much fluid and salt. Retention of water readily manifests itself by edema. Marked retention of nitrogen, however, may occur without producing clinical symptoms of uremia. The determination of the presence or absence of retention is essential, therefore, for rational treatment. When the uremic (azotemic) and the chloremic type of nephritis are found in pure form, treatment in each is quite different. In those showing retention of nitrogen without edema, the treatment is sparing and eliminative: first by preventing further accumulation by means of a diet low in protein (approximately 40 Gm. daily), but of an adequate caloric content, and, secondly, by forcing rather than withholding fluid. Transfusions may occasionally be very usefully combined with withdrawal of from 300 to 500 cc. of uremic blood. In the chloremic form when edema is a prominent feature, the reverse holds true. The amount of fluid and salt should be minimal, while restriction of protein may not only be unnecessary but may be actually contraindicated. Epstein actually uses a diet high in protein for certain types of nephrosis, to take advantage of the specific dynamic action of protein in restoring the normal equilibrium of the blood.

Elimination can be accomplished by catharsis, sweats and hot packs, or by diuretics. Useful diuretics include water, glucose, the caffein derivatives, certain inorganic acid-forming or base-forming salts, and the new organic mercurial preparations, such as merbaphen (novasurol).

Water.—With retention of urea in the absence of edema, "sparing the kidneys" by means of a low intake of fluid is not only useless but may be contraindicated. By means of the water test in individual patients, the ability of the kidneys to excrete water can be demonstrated directly. Especially when the water test and concentration test show a lowered and fixed urinary specific gravity, there is a definite indication for forcing water by mouth to the amount of from 2,500 to 3,000 cc. or more daily. This at times very definitely prolongs life by alleviating or postponing impending uremia.

Glucose.—Solutions of glucose by enteroclysis or intravenously are often quite efficacious. By vein, generally a 10 to 20 per cent solution may be given in amounts of 500 cc. once or twice a day. If this solution is not sufficiently pure, severe reactions will occur.

The uses and limitations of the caffein derivatives are well known and need no discussion. The alkali-forming inorganic salts, sodium or potassium citrate, acetate or bitartrate, as in imperial drink, are especially useful in inflammatory conditions of the urinary tract.

The newer diuretics include two acid-forming salts, calcium chloride and ammonium chloride, and the mercurial preparation merbaphen. Within the last two years, therapeutic successes heretofore unattained have followed their use alone or in combination. They are particularly indicated in patients with retention of salt and water; the nephrosis type, especially when edema has not been affected by the use of diets low in salt and fluid.

Calcium Chloride.—Calcium chloride, first suggested by Meyer and Cohn[26] and used for diuresis by Schultz[27] and by Blum and others,[28] has been given by mouth in a dose of from 5 to 18 Gm. daily for periods varying from a few days to two or three weeks.[29] Its ingestion is followed by elimination of calcium by bowel, of chlorine by the kidney, and with it large amounts of sodium, with resulting elimination of water. The urine becomes more acid, and a mild acidosis is seen also in the lowered carbon dioxide combining-power of the plasma.

Ammonium Chloride.—In many patients the ingestion of calcium chloride causes nausea and vomiting, and therefore ammonium chloride has been substituted. Such a substitution was suggested by Haldane, Hill and Luck,[30] and recent clinical reports have been made by Keith, Barrier and Whelan.[31] Ammonium chloride has been given by mouth in a dose of from 5 to 16 Gm. for periods of from three to eighteen days. The results are practically identical with those of calcium chloride. There is a danger that acidosis may be produced by either, and therefore careful watching is necessary if used in the presence of preexisting acidosis from marked renal insufficiency associated with retention of urea; in such cases it should be used rarely and with extreme caution.

Merbaphen.[32]—This organic mercurial preparation was introduced by Saxl and Heilig[33] and later used by Nonnenbruch[34] and Mühling.[35] As with ammonium chloride and calcium chloride, the excretion of sodium and chlorine in the urine is increased, but acidosis does not result as there is no change in the acid-base equilibrium. Merbaphen is injected intramuscularly and intravenously in a dose of from 0.5 to 2.0 cc. of the 10 per cent solution every three to five days, as necessary. A preliminary intramuscular injection of 0.5 cc. should be given as a precautionary measure to determine a patient's tolerance to mercury. The mechanism of diuresis following the use of merbaphen is not yet thoroughly understood. In certain cases, when diuresis has not followed the use of ammonium chloride, or merbaphen alone, combined treatment is effective, the chloride by mouth and the merbaphen intravenously. This is especially true when the blood chlorides are found to be low. According to Keith, merbaphen should be more effective after sufficient quantities of ammonium chloride have been taken to render the hydrogen ion concentration of the urine decidedly acid.

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[26] Meyer, L. F., and Cohn, S.: Klinische Beobachtungen und Stoffwechsel Versuche über die Wirkung verschiedener Salze beim Säugling, Ztschr. f. Kinderh. **2:** 360-419, 1911.

[27] Schultz, E.: Klinische Beobachtungen über Nierenentzündung bei Kriegsteilnehmern, Ztschr. f. klin. Med. **86:** 111-138, 1918.

[28] Blum, L.; Aubel, E., and Hausknecht, R.: L'action diuretique des sels de calcium dans la néphrite avec oedemes, Bull. et mém. Soc. méd. d. hôp. de Paris. **46:** 206-214 (Feb. 3) 1922.

[29] Keith, N. M., Barrier, C. W., and Whelan, Mary: Treatment of Nephritis and Edema with Calcium, J. A. M. A. **83:** 666-670 (Aug. 30) 1924.

[30] Haldane, J. B. S.; Hill, R., and Luck, J. M.: Calcium Chloride Acidosis, J. Physiol. **57:** 301-306 (June) 1923.

[31] Keith, N. M.; Barrier, C. W., and Whelan, Mary: The Diuretic Action of Ammonium Chlorid and Novasurol in Cases of Nephritis with Edema, J. A. M. A. **85:** 799-806 (Sept. 12) 1925.

[32] Keith, Barrier and Whelan (footnote 33). Rowntree, L. G.; Keith, N. M., and Barrier, C. W.: Novasurol in the Treatment of Ascites in Hepatic Disease, J. A. M. A. **85:** 1187-1193 (Oct. 17) 1925.

[33] Saxl, Paul; and Heilig, Robert: Ueber die diuretische Wirkung von Novasurol und anderen Quecksilberingektionen, Wien. klin. Wchnschr. **33:** 943-944, 1920.

[34] Nonnenbruch, W.: Ueber die Wirkung des Novasurols auf Blut and Diurese, München. med. Wchnschr. **2:** 1282-1283, 1921.

[35] Mühling, Adolf: Studie über die diuretische Wirkungsweise von Quecksilber; Ausgeführt mit dem organischen Quecksilberpräperat Novasurol, München. med. Wchnschr. **68:** 1447-1449, 1921.

The clinical and experimental work with these new drugs seems to indicate very bright therapeutic possibilities. On the other hand, to be more effective they must be accompanied by the use of careful diets.

Posture.—When massive edema, especially of the lower extremities, cannot be influenced by the usual measures, it should be recalled that putting the patient in the "jack-knife" position with head and feet elevated will often cause the fluid to drain from the extremities and to collect in the abdominal cavity, on which paracentesis can then be performed. Posture is of importance further in its relation to convulsions and coma when massive edema is present. Rowntree[36] has emphasized the importance of this relationship and the desirability of elevating the head to prevent cerebral edema.

Removal of Foci.—This is not indicated equally in all types of cases of nephritis. It should always be advocated in the focal type. In cases of arteriosclerotic nephritis, such removal is contraindicated. It should be done when possible in cases of nephrosis and in certain selected cases as may be indicated in diffuse glomerular nephritis. When a patient is heavily waterlogged from nephrosis or suffers from severe diffuse glomerular nephritis, the surgical risk is grave, and the opportune time for eradication of foci would be after fluid has been extensively removed, or in the more compensated states of renal inefficiency. Eradication of foci in the presence of bad prognostic signs is futile and attended with grave risks.

SUMMARY

During the last decade there have been many advances in renal physiology and the classification and treatment of the nephritides. With the concise knowledge presented and the use of the five simple function tests outlined, exact indications for diagnosis, treatment and prognosis can be determined.

ABSTRACT OF DISCUSSION

Dr. C. W. Dowden, West Baden, Ind.: If a majority of patients with nephritis are to be benefited by determination of the functional capacity of their kidneys, the more elaborate tests must be simplified or made to serve as standards against which simple and easily applied methods may be checked; they must be applicable in the home or office without the aid of a trained nurse; they must not require elaborate apparatus; they must not require much knowledge of chemistry, and they must detect the earliest signs of kidney disease. Two tests, the mercury combining power of the blood and the salivary urea index, seem to meet the requirements of these postulates and to furnish information that is quite as accurate as the more elaborate blood chemistry methods. Deviation of physiologic function (whether pathologic or not) in any organ should be reflected in the product or the end result of its normal labor. The addition to the blood stream of various dyes, drugs or chemical compounds is not testing physiologic function in the strict sense and is frequently subject to error. Even with the addition of such compounds as creatine, urea or benzoic acid, the excretory threshold may vary in different patients, and we all know the affinity of the liver for phenolsulphonphthalein, which may be reduced greatly in the urine even when the kidneys are normal. Certainly, the urine with its many components represents the end product of the work of the kidney and should furnish reliable evidence of what the kidney is capable of doing. A few years ago, I correlated the evidence derived from the phenolsulphonphthalein test, blood chemistry methods, and studies of the urine by the Mosenthal method and the coefficient of Ambard with simple studies of the urine consisting of quantity night and day, fixation of specific gravity at a high or low level, and water balance, in several hundred cases. Disturbance of function was demonstrated with equal or greater accuracy in the simpler methods. Certainly, fixation of specific gravity depends on disturbance, if not actual disease, of that portion of the kidney unit that has to do with the elimination of the urinary components, particularly salt. Marked disproportion between the intake and the output of fluids certainly concerns the transudative property of the glomeruli and the secretive property of the tubules, if such they possess. Any pathologic condition that will interfere with the normal concentrating power of the kidney and allow nitrogenous products to accumulate in the blood or to decrease in the urine, that will increase the constant of Ambard, if the rate of excretion of urea depends on the laws he has formulated, that will decrease the phenolsulphonphthalein output within two hours, will, I believe, produce a certain limitation to kidney function, depending on its extent and degree, which can be estimated by fixation of specific gravity, nocturnal polyuria, retention of fluids and appearance of edema, albumin, casts and anemia. Do not these tests vary with pathologic changes in any portion of the kidney unit? Improvements in the simple methods, which eliminates the chief objection to them, viz., the time required, are the water (dilution) test and the concentration test of Volhard and Fahr, which furnish practically the same information in a short period of time. The more elaborate methods must not be decried. When an elaborate, difficult and scientific test explains the meaning of simple phenomena, it has accomplished the greatest good and justified its very existence.

Dr. L. P. Gay, St. Louis: The most valuable tests are those that can be done quickly and accurately by the busy physician. The phenolsulphonphthalein test of kidney function was of marked benefit and is widely used. The concentration-diuresis tests of Volhard and Fahr indicating kidney function and the same type of test devised by Olmsted for classification require no more equipment than a urinometer and deserve more general use. The mercury combining power of the blood showing urea retention is a simple test. The work of Schmitz, Rodenburg and Meyers seems to show that uremic convulsions occur when the inorganic phosphorus of the blood increases and the calcium decreases, regardless of the urea retention. Nevertheless, a high blood urea helps to distinguish the types of nephritis, and a reduction of the blood urea is of distinct prognostic value. Whenever possible, it is my practice to do as much laboratory work as time permits. It gives me a clearer idea of the condition than a laboratory report, and tends to lessen the tendency to machine made diagnosis, which is becoming so prevalent. Furthermore, much interesting information is gained that a technician might overlook. For this reason alone, I am glad to have the mercury combining power test in my laboratory. It is unquestionably a great advance; it can be done in a well equipped laboratory, or on the window sill of a country physician's office. The test deserves wide application as a means not only of diagnosis but also of prognosis.

Dr. P. S. Hench, Rochester, Minn.: To understand more accurately the rôle of the two tests described, which were elaborated by Miss Martha Aldrich and me, I might make the following comparison: There are three main methods for estimating the hemoglobin of blood. The busy practitioner most frequently uses the simple Tallqvist blotting paper method, somewhat inaccurate but very useful on account of its simplicity. The internist may use the Dare method to grade anemia more carefully, while for the most careful work the actual chemical determination of hemoglobin gives the most accurate results, though the procedure is not as simple as the other two methods. So for the determination of nitrogen, especially urea retention in the body, the salivary index would seem suitable for general work; the estimation of the mercury combining power of blood would be especially useful when more critical analyses are needed, and the estimation of the urea by the urease method would remain the standard test for use when the most exact refinements of technic are wanted. As I have pointed out, urea is the main variable mercury combining element in blood or saliva, although mercury combines with certain other substances. In our large range of values of blood urea, from 20 to 560 mg., the chart that I showed exhibits little differences between the values obtained for the blood urea by estimation from the mercury combining power of blood and those actually determined by the urease method. The indications for the practical usage of the tests would therefore seem clear.

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[36] Rowntree, L. G.: Personal communication to the author.

IMPORTANCE OF SYMBIOSIS, OR CLOSE ASSOCIATION OF DIFFERENT SPECIES OF ORGANISM

IN THE PRODUCTION OF CERTAIN BIOCHEMICAL PHENOMENA AND IN THE CAUSATION OF CERTAIN DISEASES AND CERTAIN SYMPTOMS OF DISEASE *

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NEW ORLEANS

The subject of symbiosis has, so far, attracted little attention from medical men and bacteriologists. I use the term symbiosis *sensu lato* to indicate the living together of two organisms in close association, their close association not being detrimental to either of them. Symbiosis *sensu stricto* means that the association is not only not detrimental, but mutually beneficial. Botanists have been interested in symbiosis for many years. They discovered, for instance, that a large group of plants represent a symbiosis of two different vegetal organisms; they also found that symbiosis plays an important rôle in the nutrition processes of numerous plants and in the germination of certain seeds.

FORMS OF SYMBIOSIS

Symbiosis Between Two Vegetal Organisms; Composite Plants.—The best known example is furnished by the lichens. A lichen is a composite plant consisting of a green alga and a fungus which may be grown separately with difficulty. All of us have observed the green dust which often occurs on lichens. This powdery dust consists of young associations called soredia and are composed of algal cells and fungal hyphae. Another well known symbiotic plant is the ginger beer plant, the lumps of which are composed of a yeast (*Saccharomyces pyriformis*) and a bacterium (*Bacterium vermiforme*).

Symbiosis Between a Vegetal Organism and an Animal Organism.—Symbiosis may also occur between plant and animal. For instance, in the marine worm *Convoluta* an alga is always present, and in the larvae of certain aphids and coccids yeasts occur as more or less definite structures.

Importance of Symbiosis in the Nutrition Process of Certain Plants.—Reissek, in 1847, came to the conclusion that fungi were normally present within the cortical cells of the roots of various flowering plants, being best developed in the underground roots of orchids. Soon after, another type of association was noted, especially in forest trees. Here the fungus mycelium forms a sort of mantle around the root, in contrast to being within the cells of the cortex. This association is very common in *Castanea* and *Corylus*. The rootlets so infected generally take a characteristic coralloid appearance. Frank, in 1885, coined the term "mycorrhiza" to denote fungi (including bacteria) in or around the roots of plants. He used the term "endotrophic mycorrhiza" for those forms in which the fungus occurred within the tissues of the host, and the term "ectrophic mycorrhiza" when the fungal mycelium surrounded the rootlets as a sheath.

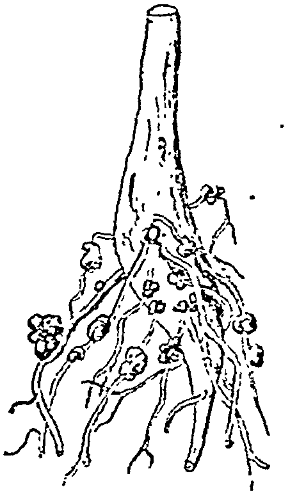

Fig. 1.—Nodules on rootlets.

The antiquity of such associations is seen in the fact that they occur in fossil plants such as *Rhynia, Hornea* and *Asteroxylon* from the Lower (or Middle) Devonian. Weiss, in 1906, recorded mycorrhiza in fossil roots from the lower coal measures, for which he suggested the name "mycorrhizonium."

A well known instance of symbiosis is represented by the nodules found in the roots of many leguminous plants. For many years it was noted that roots of leguminous plants such as peas and clover presented a large number of nodules or tubercles which were for a long time considered to be normal morphologic features of such plants. Later it was found that these nodules are formed by the presence of a bacillus (*B. radicola*). This bacillus is apparently always present in the soil; the bacillus enters through a root-hair, and reaches the interior of the cortex and begins multiplying there, producing the nodular outgrowths. The organism feeds and grows principally on the carbohydrates (sugars, etc.) supplied by the host plant, these having been produced as the result of the photosynthetic activity of plant leaves. The bacillus is therefore supplied by the plant with carbohydrate food, but the bacillus in return supplies the plant with the nitrogenous compounds necessary for the production of protoplasm, by utilizing the free nitrogen of the air.

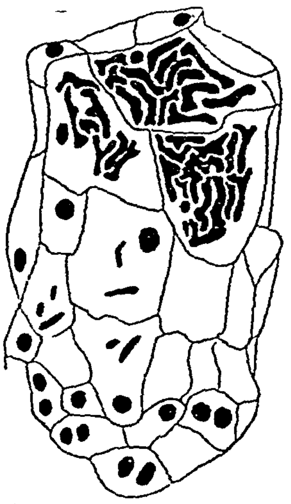

Fig. 2.—Section of nodule, showing bacilli.

Most plants have to take their nitrogen in a combined form, as ammonium salts or nitrates, as nitrogen is a very inert element and difficult to force into combination with other elements. *B. radicola* is one of the very few organisms that can perform this really stupendous work, provided it is supplied with the means of obtaining the energy required for the process in the form of appropriate carbohydrate nutrition. There cannot be any doubt about the facts, for the bacillus will do the same thing when cultivated outside the plant under strict experimental conditions.

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* Read before the Section on Pathology and Physiology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

After the bacilli have thriven for a while, mainly at the expense of the food supplied by the root in which they are living and multiplying, many of the individuals become weaker and undergo a sort of degeneration, while a few pass into a resting stage, in which they become highly resistant to adverse conditions of life. The leguminous plant, which hitherto has been giving out carbohydrate food to the bacillus, now begins to receive: it receives from the degenerated mass of bacilli the stores of nitrogenous matter they have accumulated, and this is a very good return for the sugars which it had previously expended. The comparatively few surviving bacilli serve to infect the soil—as the roots gradually rot—and then they are enabled to attack the roots of new leguminous plants. It may be said that the plants acquire a costly food, nitrogen, in exchange for a cheap one.

Higher Plants.—The phenomena of symbiosis between root and fungi occur also in many plants higher than the leguminous, for instance, in forest trees. In these trees the fungus mycelium forms a sort of mantle round the root, in contrast to being inside the cells of the cortex. The association is very common in *Castanea* and *Coryeus,* as already noted, the rootlets so infected generally taking a characteristic coralloid appearance.

IMPORTANCE OF SYMBIOSIS IN THE PHENOMENA OF REPRODUCTION

Germination of Seeds.—Noel Bernard, in 1902, proved experimentally that certain seeds, as the seeds of orchids, can germinate only in the presence of appropriate fungi. If the seedling is not infected with the appropriate fungus, generally the same fungus which infects the roots of the adult parent plant, as a rule germination will not take place, or it will be slow and imperfect. To the same conclusion came Burgeff: that orchid seeds germinate without difficulty on having the appropriate fungus supplied to them. It is interesting to note that before this was scientifically known, orchid growers had found out that to make orchid seeds develop it was necessary to sow them in the soil containing the parent plant; the explanation is that the seed in this way got infected with the fungi necessary to induce germination; viz., the fungus which is found in the roots of orchids.

A few more details may be of interest: Orchid seeds taken from the capsule under sterile conditions and sown on ordi- nary substrata where no fungus is present do not as a rule develop. The only phenomenon observed in these conditions is that usually the seeds swell and after two or three months— after the reserve food, which is oil, part of which becomes transformed into starch, has been exhausted—become green and soon after die, unless the fungus infestation takes place. At first it seems peculiar that the seeds should die after the production of chlorophyl; one would rather expect that autonomous growth by acid of photosynthesis should take place; as Ramsbottom[1] aptly put it, it appears that the seedling forms chlorophyl as a sort of last despairing effort.

IMPORTANCE OF SYMBIOSIS IN FERMENTATION PHENOMENA

Transformation of Simple Acid Fermentation into Fermentation with Production of Gas.—During the years 1904 and 1905, while in the East and in London on leave, I became interested in the study of bakers' yeast and in fermentation caused by yeast. I made the following observations, mentioned at meetings of the Ceylon Branch of the British Medical Association:

1. Bakers' yeast, both in the East and in London, is not a pure culture of a single species of yeast. It is generally composed of two or more species of yeast plus one or two or several species of bacteria. The bacteria isolated from samples of yeast in the East and in London do not produce gas fermentation in sugars—they produce simple acidity (lactic acid fermentation).

2. Comparing the fermentation reaction of bakers' yeast used in toto as obtained from the bakers, sowing the particles of the sample in the various sugars, with the fermentation reactions of the isolated pure cultures of the different species of *Saccharomyces* and bacteria composing the sample, I found that the yeast in toto ferments a much larger number of carbohydrates than any one of the saccharomyces and bacteria composing the sample. In this country I may say that all the samples of yeast I have examined contain one or more gas-forming bacilli.

3. By mixing artificially all the organisms isolated from the sample of yeast, in certain cases the same fermentation reactions are obtained as with the yeast in toto. There are apparent exceptions, as shown by the following example. From Orphington, a place in the country near London, I obtained in 1919 a sample of bakers' yeast which gas fermented a very large number of carbon compounds, including starch. I investigated the sample mycologically by plating on maltose and glucose agar, etc., and I isolated and grew in pure cultures what I believed to be all the organisms, *Saccharomyces* and bacteria, found in that sample. By mixing all the pure cultures I obtained the same fermentation reactions as with the sample of yeast in toto, except that the mixture did not touch starch. The experiment was repeated many times with the same result, until finally I had recourse to the following procedure: The surface of the glucose agar plates on which a minute particle of the yeast-cake had been plated out was washed with a little peptone water, and the washing inoculated into starch. Fermentation of starch took place, the inference being that probably some very minute colonies on the verge of invisibility had escaped my notice when investigating the plates and picking out all the colonies present; the thought came to me also that there might be an ultramicroscopic germ present.

4. By mixing artificially a nonmaltose fermenting *Saccharomyces* (isolated from a sample of bakers' yeast) with a bacillus isolated from the same sample, producing acidity in maltose and several other sugars, but never gas in any substance, I obtained fermentation of maltose with production of gas.

In recent years I have studied the same and similar phenomena, using mostly pathogenic bacteria; bacilli and cocci, also a pathogenic yeast. In the present paper I will limit myself to give the results of experiments—a number of them already published—with the following organisms:

(*a*) Bacilli: *B. typhosus, B. dysenteriae* Flexner, *B. morgani, B. proteus,* strain P, *B. coli-communior, B. kandiensis, B. vermiculoides.*

(*b*) Cocci: *Staphylococcus aureus,* two strains of *Streptococcus pyogenes.*

(*c*) Yeast: *Cryptococcus graciloides.*

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[1] Ramsbottom, T.: Orchid Mycorrhiza, Charlesworth Catalogue, 1922.

The strain of *B. typhosus* was isolated from a case of typhoid fever, and shows all the typical serologic reactions and biochemical characteristics of the typhoid bacillus; it is very highly agglutinated by typhoid serum; it does not produce gas in any carbohydrate; it produces acidity in glucose, levulose, maltose, galactose, mannitol, dextrin and sorbite.

The strain of *B. morgani* was isolated from a stool; it is motile; it produces acidity and gas in glucose, levulose and galactose, but neither acidity nor gas in any other sugar. In this paper I will refer to it as strain S.

The strain of *B. dysenteriae* Flexner is serologically and biochemically typical; it produces acidity in mannitol. It was obtained from the Lister Institute.

The strain of *B. proteus* was isolated from a case of enteritis; it is motile and liquefies gelatin and serum rapidly; it produces acidity and gas in glucose, levulose, galactose, saccharose and glycerol; it produces neither acidity nor gas in lactose, dulcitol, mannitol, maltose, dextrin, adonite, inulin, sorbite, inosite, salicin, amygdalin, isodulcitol or erythrite. As I have stated in other publications, the term proteus covers a group of closely allied bacilli and not one species only. The strain I have used is very similar to the variety which I called paradiffluens.[2] In this paper I will denote it as *B. proteus* (P).

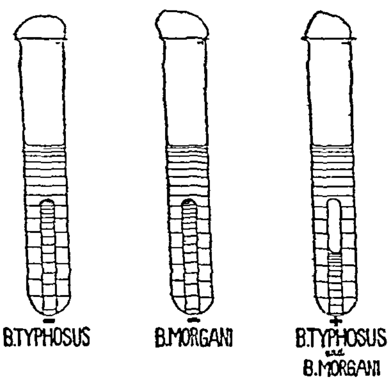

Fig. 3.—Fermentation of B. typhosus and B. morgani.

B. kandiensis is an intestinal bacillus somewhat related to *B. typhosus;* it is motile and does not produce gas in any sugar; it produces acidity in glucose, levulose, galactose, mannitol, adonite, inosite, isodulcite and erythrite; it does not clot milk; it does not produce indol. There is a variety producing indol (kandiensoides).

The strain of *B. coli-communior* produces gas in many sugars, including saccharose, but does not produce either acidity or gas in adonite.

The strain of *Staphylococcus aureus* was isolated at the Ross Institute, London.

The two strains of *Streptococcus pyogenes* were obtained from the Laboratories of Public Health, London.

B. vermiculoides and *Cryptococcus graciloides* were isolated from two cases of stomatitis cryptococcobacillaris in Central America.

RESULTS OF TESTS

B. TYPHOSUS AND B. MORGANI

Action on Maltose.—*B. typhosus* alone produces acidity, never gas. *B. morgani* alone has no action whatever on maltose; it produces neither acidity nor gas. If a tube of maltose peptone water is inoculated, however, with *B. typhosus* and immediately after with *B. morgani* and placed in the incubator at 35 or 37 C. for forty-eight hours, not only will acidity be produced, but also a large amount of gas. The same result is obtained if the two bacilli are previously mixed in plain peptone water and the peptone water mixture inoculated in tubes of maltose. The same result is also obtained if *B. morgani* is added to *B. typhosus* twenty-four hours after inoculating with *B. typhosus;* if the interval is more than twenty-four hours, then the production of gas is not so constant.

When the two bacilli *B. typhosus* and *B. morgani* live naturally in close association, the same phenomenon takes place, as shown by the following observation, which I related in one of my previous papers: The stool of a suspected typhoid patient was examined bacteriologically in London, McConkey's medium plates being used. An exceptionally large number of white colonies developed; fifteen were picked out and further investigated by replating, etc. Twelve of them consisted of two organisms—*B. typhosus* and *B. morgani;* three of *B. morgani* alone. The mixed cultures derived from the colonies containing only *B. morgani* had no action whatever on that sugar. Mixed cultures obtained artificially by inoculating agar tubes with both *B. typhosus* and *B. morgani* behave in the same manner—namely, when a loopful of the mixed growth is inoculated into a maltose peptone water tube, acid and gas are produced.

Action on Mannitol.—As is well known, *B. typhosus* produces acidity only in mannitol, never gas; *B. morgani* has no action—no acidity or gas is produced. The mixture *B. typhosus* and *B. morgani* produces acidity and gas.

Action on Sorbite.—*B. typhosus* alone produces acidity, never gas, in sorbite; *B. morgani* alone has no action whatever on sorbite; it produces neither acidity nor gas. The mixture *B. typhosus* and *B. morgani* produces acidity and gas.

Action on Other Carbon Compounds.—The reactions are seen at a glance in Table 1, in which the fermentative characters are given of *B. typhosus* alone, *B. morgani* alone, and the mixture of *B. typhosus* and *B. morgani.*

Table 1.—*Fermentative Characters of B. Typhosus and B. Morgani* *

	Lactose	Saccharose	Glucose	Levulose	Maltose	Galactose	Mannitol	Sorbite
B. typhosus....................	0	0	A	A	A	A	A	A
B. morgani......................	0	0	AG	AG	0	AG	0	0
B. typhosus and B. morgani..	0	0	AG	AG	AG	AG	AG	AG

* 0, negative, neither acid nor gas; A, acid; G, gas.

From the table it is seen that certain sugars and other carbon compounds, which when acted on by *B. typhosus* alone undergo a simple acid fermentation, and when acted on by *B. morgani* alone do not undergo any fermentation, neither acid nor gas being produced, are susceptible of undergoing fermentation with production of gas when they are acted on by the mixture of the two bacilli. In the carbon compounds in which *B. typhosus* alone produces no acidity and *B. morgani* alone neither acidity nor gas, their mixture produces neither acidity nor gas.

Table 2.—*Fermentative Characters of B. Typhosus and B. Proteus*

	Lactose	Saccharose	Glucose	Levulose	Maltose	Galactose	Mannitol	Sorbite
B. typhosus....................	0	0	A	A	A	A	A	A
B. proteus (P).................	0	0	AG	AG	0	AG	0	0
B. typhosus and B. proteus (P)	0	0	AG	AG	AG	AG	AG	AG

B. TYPHOSUS AND B. PROTEUS

The strain of *B. proteus* used (P), as already stated, has no action on maltose, mannitol or sorbite; it produces neither acidity nor gas in these substances.

Action on Maltose.—*B. typhosus* alone produces acidity only, never gas; *B. proteus* (P) alone produces neither acidity nor gas; their mixture produces acidity and gas.

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[2] Castellani and Chalmers: Manual of Tropical Medicine, 1919, p. 943.

Action on Mannitol.—*B. typhosus* produces acidity, never gas, in this alcohol. *B. proteus* (P) has no action on it; neither acidity nor gas is produced. Their mixture, however, produces acidity and gas.

Action on Sorbite.—*B. typhosus* produces acidity only; *B. proteus,* neither acidity nor gas; their mixture causes production of acidity and gas.

B. DYSENTERIAE FLEXNER AND B. MORGANI

Action on Mannitol.—*B. dysenteriae* Flexner produces acidity only, never gas. *B. morgani* has no action on it; neither acidity nor gas is produced. The mixture *B. dysenteriae* and *B. morgani* produces acidity and gas.

Action on Maltose.—*B. dysenteriae* Flexner produces only acidity, never gas; *B. morgani* produces neither acidity nor gas; their mixture produces acidity and gas.

B. DYSENTERIAE FLEXNER AND B. PROTEUS

Action on Mannitol.—*B. dysenteriae* Flexner produces acidity, never gas; *B. proteus* (P) produces neither acidity nor gas; their mixture produces acidity and gas.

Action on Maltose.—*B. dysenteriae* Flexner produces only acidity, never gas; *B. proteus* (P) produces neither acidity nor gas; their mixture produces acidity and gas.

Table 3.—*Fermentative Characters of B. Dysenteriae Flexner, B. Morgani and B. Proteus*

	Lactose	Saccharose	Glucose	Levulose	Maltose	Galactose	Mannitol	Sorbite
B. dysenteriae Flexner	0	0	A	A	A	A	A	0
B. morgani	0	0	AG	AG	0	AG	0	0
B. proteus (P)	0	0	AG	AG	0	AG	0	0
B. dysenteriae Flexner and B. morgani	0	0	AG	AG	AG	AG	AG	0
B. dysenteriae Flexner and B. proteus (P)	0	0	AG	AG	AG	AG	AG	0

B. TYPHOSUS, B. MORGANI AND B. PROTEUS

Action on Maltose, Mannitol and Sorbite.—*B. typhosus* alone produces acidity, no gas. *B. morgani* alone produces neither acidity nor gas. *B. proteus* (P) alone produces neither acidity nor gas. The mixture *B. morgani* and *B. proteus* produces neither acidity nor gas. The mixture of the three germs produces acidity and gas.

B. COLI-COMMUNIOR AND B. KANDIENSIS (VAR. KANDIENSOIDES)

Action on Adonite.—*B. coli-communior* produces neither acidity nor gas. *B. kandiensis,* acidity only, never gas. The mixture *B. coli-communior* and *B. kandiensis* will produce acidity and gas, although slowly. The tubes must be kept at 37 C. for at least a week.

STAPHYLOCOCCUS AUREUS AND B. MORGANI

Action on Maltose.—*Staphylococcus aureus* alone (Ross Institute strain) produces acidity, no gas, in maltose; *B. morgani* alone produces neither acidity nor gas. The mixture *Staphylococcus aureus* and *B. morgani* produces acidity and gas.

STAPHYLOCOCCUS AUREUS AND B. PROTEUS

Action on Maltose.—*Staphylococcus aureus* alone (Ross Institute strain) produces acidity, no gas, in maltose; *B. proteus* alone produces neither acidity nor gas. The mixture *Staphylococcus aureus* and *B. proteus* produces acidity and gas.

STREPTOCOCCUS PYOGENES AND B. MORGANI

Action on Maltose.—*Streptococcus pyogenes* (strain Public Health Laboratory, London) alone produces acidity, no gas; *B. morgani* produces neither acidity nor gas. The mixture *Streptococcus pyogenes* and *B. morgani* produces acidity and gas, but it may take eight or ten days at 37 C. before the gas appears.

STREPTOCOCCUS PYOGENES AND B. PROTEUS

Action in Maltose.—*Streptococcus pyogenes* (strain Public Health Laboratory, London) alone produces acidity, no gas; *B. proteus* produces neither acidity nor gas. The mixture *Streptococcus pyogenes* and *B. proteus* produces acidity and gas, but it may take eight or ten days at 37 C. before the gas appears.

BACILLUS VERMICULOIDES AND CRYPTOCOCCUS GRACILOIDES

Bacillus Vermiculoides and Cryptococcus Graciloides.—These two organisms live apparently in symbiosis, and it took me more than a year to separate them. The symbiotic mixture produces, though very slowly, gas in glucose, levulose and maltose. The cryptococcus alone does not produce either acid or gas; the bacillus alone produces acidity only.

Table 4.—*Fermentative Characters of B. Vermiculoides and Cryptococcus Graciloides*

	Lactose	Glucose	Levulose	Maltose	Galactose	Saccharose	Mannitol	Dulcite	Salicin	Inosite	Dextrin	Inulin	Sorbite	Adonite	Arabinose	Raffinose	Isodulcite	Erythrite	Glycerin	Gelatin
Cryptococcus graciloides Castellani	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bacillus vermiculoides Castellani	A	A	A	A	A	0	0	0	0	0	0	0	0 or A v. S	0	0	0	0	0	0	0
Cryptococcus graciloides and B. vermiculoides	A	AG	AG	AG	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SUMMARY AND CONCLUSIONS

Some years ago I found that the usual bakers' yeast, as obtainable in Ceylon and in England, is not a pure culture of yeast, but is generally composed of two or more species of *Saccharomyces* and one or two or several species of bacteria living in close association, and I made the observation that the whole yeast as a rule gas-fermented more carbohydrates than any of the isolated germs did, either *Saccharomyces* or bacteria. I found also that a bacillus (isolated from a sample of yeast) which produced only acidity, not gas, in maltose, would produce gas when I added to it a saccharomyces which was inactive on maltose and was isolated from the same sample.

In recent years I have used for my experiments mostly pathogenic bacteria and also a pathogenic yeast, *Cryptococcus graciloides.*

Simple acid fermentation of certain carbon compounds caused by micro-organisms that never produce gas may in a number of instances be transformed into fermentation with the production of gas by adding a micro-organism which, alone, is inert; viz., produces neither acidity nor gas on those particular carbon compounds. For example: *B. dysenteriae* Flexner produces acidity, never gas, in maltose and mannitol; *B. morgani* produces neither acidity nor gas in those two carbohydrates; the mixture *B. dysenteriae* Flexner and *B. morgani* produces, however, acidity and gas. For the phenomenon to take place, several conditions are necessary: the most important one seems to be that the added bacillus, though inert on those particular carbon compounds, must be capable of producing fermentation with gas in glucose.

IMPORTANCE OF CLOSE ASSOCIATION OF TWO ORGANISMS IN ETIOLOGY OF CERTAIN DISEASES AND CAUSATION OF CERTAIN SYMPTOMS

The whole trend of scientific medicine since Pasteur and Koch has been toward the mono-etiology of disease

—one disease, one specific germ. Few of us medical men ever give a thought to the possibility that certain diseases may be caused by the association of two organisms, neither of which alone is capable of producing the condition. Do diseases of this type really exist? One such disease has been known for years, viz., Plaut-Vincent's angina, caused by the association of two germs, a spirochete and the fusiform bacillus; but objections have been brought forward against the condition being of true symbiotic origin. Certain authors, with whom I do not agree, consider that the two so-called organisms are different stages of the development of the same germ. Another objection of greater weight to the true symbiotic origin of the malady is that, according to certain observers, there are cases in which only the spirochete or only *B. fusiformis* is present. A third objection is that in every case of so-called Plaut-Vincent's angina, a very large number of cocci are present: it is not, therefore, merely a symbiosis between a spirochete and the fusiform bacillus.

I venture to say that I am in a position to bring forward three examples of disease in which a symbiosis, or close association of two organisms, is apparently the true cause. These three diseases are of very little importance from a practical point of view, but I think they are interesting from a scientific standpoint. These conditions are:

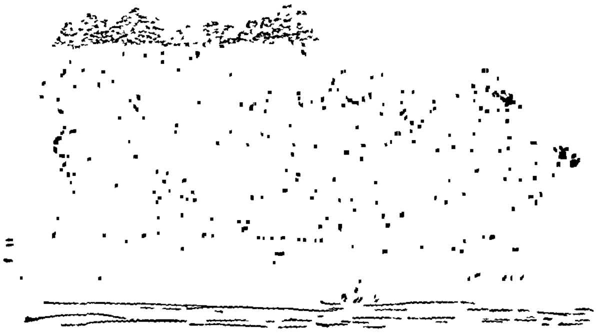

Fig 4.—Trichomycosis nigra, showing masses of bacillary hyphae of Nocardia tenuis and masses of black pigment producing coccus.

1. Trichomycosis nigra.
2. Trichomycosis rubra.
3. Stomatitis cryptococcobacillaris.

Trichomycosis nigra is a disease of the hair of the axillary and pubic regions, characterized by the presence on the shaft of the hair of small, jet black nodules. The microscopic examination of these nodules shows that they are composed of enormous numbers of bacillary bodies of a fungus (*Nocardia*), which I called *Nocardia tenuis*, and large numbers of a black pigment-producing coccal organism, *Micrococcus nigrescens* Castellani. We have here, therefore, an association between a fungus, *Nocardia*, and a coccus. The fungus alone does not produce tinea nigra; it has no pigment. When the fungus is present alone, the nodules are yellow (trichomycosis flava leptothrix). The micrococcus alone cannot reproduce the disease. I have never seen nodules consisting of the coccus alone: the coccus can be artificially grown; cultures smeared in various ways on the armpits and axillary hairs have never produced the nodular condition. Tinea nigra, therefore, may be considered to be caused by a symbiosis of two organisms, neither of which alone is capable of producing the typical condition.

DESCRIPTION OF NOCARDIA TENUIS

Nocardia tenuis, Castellani, 1912. (Syn.: *Discomyces, Streptothrix, Cohnistreptothrix tenuis*, Castellani, 1912.)

The microscopic examination of the nodules in cleared specimens reveals the presence of enormous numbers of rodlike bodies—the bacilliform hyphae of a nocardia—which are gram-positive, but not acid-fast. If the nodules are kept in alcohol or solution of formaldehyde for several months the fungus apparently loses partially or totally its property of being stainable by Gram's method. The bacillary bodies vary in length from 2 to 8 microns and more; the average breadth is approximately 0.14 to 0.3 micron; they may be straight or slightly bent, very seldom if ever branching; they are fairly closely packed together, and are embedded in a cementing substance, apparently secreted by the fungus. This ground substance is fixed to the cortex of the hair, and a portion of it lies under the cuticle and some of the superficial layers of the cortex. In regard to cultivation, Chalmers and O'Farrell observed some slight growth in hanging drops of equal parts of human serum and physiologic sodium chloride solution. The fungus grew, showing branching forms and coccal forms. The branching was monopodial, and the hyphae were nonseptate. Macfie, in one case, succeeded in cultivating the fungus on ascitic sugar agar, the colonies being very small and translucent.

Micrococcus (Nigrococcus) nigrescens, Castellani, 1911.

This is a gram-positive, rather large, nonmotile coccus, which in certain mediums may take the appearance of a coccobacillus. It produces a black pigment. Sugar mediums are more suitable for the growth of the organism than the ordinary agar.

Sabouraud Maltose Agar.—Colonies appear from twenty-four to forty-eight hours after inoculation. They are roundish, at first white, but after a couple of days the center of each colony turns black, and the pigmentation slowly spreads eccentrically. After a time the colonies may coalesce into a jet-black mass.

Glucose Agar.—The growth is similar to Sabouraud, but slightly less abundant. The black pigmentation develops from the center colonies and slowly spreads toward the periphery.

Levulose Agar.—This is identical to glucose.

Saccharin Agar.—The pigmentation is less pronounced, and does not spread to the whole of the growth.

Raffinose Agar.—The same as saccharin.

Lactose Agar.—Scanty pigmentation.

Alkaline Maltose Agar.—Black pigmentation is well marked, though in many cases it does not extend to the whole of the growth.

Acid Maltose Agar.—Growth is less abundant than on alkaline maltose. Black pigmentation is well marked.

Mannite Agar.—As alkaline maltose.

Inulin.—As alkaline maltose, but pigmentation less pronounced.

Saccharose.—As inulin agar.

Glycerin Agar.—Abundant growth, the whole of which after a time becomes a jet black.

Galactose.—As inulin.

Adonite.—As acid maltose.

Ordinary Agar.—Growth is much less abundant than on most sugar agars, and black pigmentation is less marked.

Serum.—Growth is fairly abundant, but there is only a trace of pigmentation. The medium is not liquefied.

Gelatin.—There is no liquefaction. The growth on the surface shows after a time and some dark pigmentation, but the growth along the stab is white.

Milk.—No change.

Broth.—General turbidity. A thin pellicle is often present. The microscopic examination shows cocci arranged in pairs or irregularly. They do not appear to be capsulated.

Peptone Water.—Some growth at the bottom, while the rest of the tube is clear.

Sugar Broths.—No formation of acid or gas.

Indol.—Most strains produce a trace of indol.

Trichomycosis rubra is a somewhat similar condition to tinea nigra, but the nodules are bright red. The microscopic examination of these nodules shows that they are composed of a nocardial fungus, identical to that found in tinea nigra, plus a coccal organism present in large numbers and producing a red pigment. The fungus alone produces yellow nodules, never the red pigmentation; the coccus alone produces red pigment, but is not capable of producing the nodules. For the disease to develop, it is apparently necessary to have the two organisms closely associated, and tinea rubra can therefore be considered an example of disease of symbiotic origin.

Micrococcus (rhodococcus) Castellani, Chalmers and O'Farrell, 1913.

This coccus, isolated in 1910 by Castellani from the red variety in Ceylon, and later further investigated in the Sudan and named by Chalmers and O'Farrell, is more difficult to isolate and to grow than the coccus observed in the black type of the affection. It is interesting to note that as a rule it grows better and shows more pigment on ordinary agar than on sugar mediums. It is a round or oval coccus, measuring from about 0.3 to 0.7 micron in diameter. It is separated medianly by a clear central line into two half-moon shaped segments, thus producing a diplococcal appearance. It is colorless and nonmotile, but excretes an amorphous, nongranular lemon chrome-colored pigment. In old cultures another pigment of dark brownish red appears (according to Ridgway's standards this color is madder-brown), but its relationship to the earlier yellow pigment can easily be proved, as demonstrated by Chalmers and O'Farrell, by removing some of it and suspending it in a sufficiency of distilled water, when the fluid at once resembles a similar suspension of the yellow pigment. When, however, this is done in a very small quantity of water, a faint reddish tinge can be observed. The best medium for showing the striking yellow pigment is the potato, when in twenty-four hours the growth assumes that color. The red pigment shows best in the ordinary agar slope, which, when old, exhibits the dark red pigment in the center and the yellow pigment at the sides. The organism is easily stained by all the ordinary staining reagents, and is gram-positive. However, even in preparations showing most of the cocci well colored by Gram's method a few cocci may be seen decolorized, and occasionally one may see cocci with one demilunar segment well stained while the other is completely decolorized. The organism does not appear to have a capsule.

The coccus grows aerobically and also anaerobically. The optimum temperature appears to be 37 C.; it also grows at 20 C. on agar slopes, but not as abundantly as at 37 C., and the pigmentation is much less marked. Its rate of growth depends somewhat on the medium; it grows most quickly on potato, and next best on ordinary glycerin agar. On solid mediums it gives rise to a yellow growth at first, but on most mediums, if kept long enough, some red coloration will subsequently be found. The best medium for the red coloration, as already stated, appears to be ordinary agar slope. With regard to the other agar mediums, it grows well on glucose and maltose agar. Like *M. nigrescens,* it produces neither acid nor gas in glucose, levulose, galactose, arabinose, lactose, saccharose, raffinose, dextrin, inulin, amygdalin, erythrite, adonite, dulcite, isodulcite, mannite, sorbite or inosite. It grows slowly on blood serum, which does not liquefy, and well in broth and peptone water, in which it forms a general turbidity. Gelatin is not liquefied. It does not produce indol. In agar stabs the growth is confined to the line of puncture and to the formation of a small yellow knob on the surface.

Classification of Micrococcus Castellanii.—Chalmers and O'Farrell have thoroughly investigated this point: "The organism belongs to the family *Coccaceae* (Zopf, emended Migula), and must be grouped with the genus *Micrococcus* (Hallier, 1866, emended Cohn, 1872). In this genus it certainly belongs to those forms which grow well on agar mediums and are gram-positive, and in this division it belongs to the subdivision which produces colors.

"The cocci of this subdivision which possess red coloration are only three in number—*M. roseus* (Baum, 1885), *M. ruber* (Trommsdorff, 1904), and *M. rubidus* (Hefferan). Under the term *M. roseus* (Baum, emended Lehmann and Neumann) are gathered a large number of rose-colored diplococci which are not known to be parasitic, and which produce growths on potato which are limited to the streaks. These growths are faint rose color with an oily luster and are often surrounded by a whitish glistening zone, thus giving rise to a very different appearance from that produced by *M. castellanii. M. ruber* (Trommsdorff, 1904), or, as it is sometimes named, *M. chromidrogenus-ruber,* is characterized by the fact that it does not grow on potato; its coloring matter is not soluble in water, and when treated by sulphuric acid the red color turns blue-green, while *M. castellanii* does grow on potato and its coloring matter is unaffected by 25 per cent sulphuric acid; it appears to be closely related to *M. roseus* var. *carneus,* and to be nonparasitic."

STOMATITIS CRYPTOCOCCOBACILLARIS

The appearance of the lesions is quite different from thrush. The patches, which are generally of large dimensions, are hardly raised at all, and are not cream-white; they have the appearance of a thin translucid whitish film covering parts of the oral mucosa, occasionally giving the impression of being patches of incipient diffused leukoplakia; but the microscopic examination of scrapings will clear the diagnosis. The first two cases of this stomatitis I observed in Central America; very recently I have seen a case of the same, or of a very similar, condition in England; but the investigation of this case has not yet been completed.

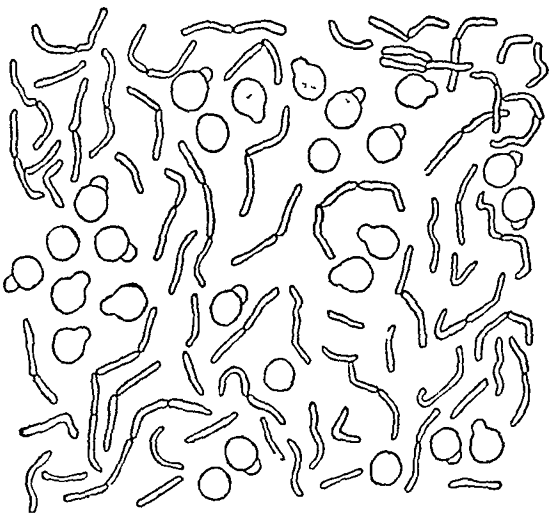

Fig. 5.—Cryptococcus graciloides and B. vermiculoides in symbiosis.

From these cases of stomatitis, the first two in Central America, clinically totally different from thrush, I have isolated a fungus and a bacillus which apparently live in symbiosis, both in the lesions and in the cultures. In glucose agar cultures a number of minute, almost streptococcus-like colonies will be seen. The microscopic examination of any of these colonies will show presence of both the delicate yeastlike fungus and the bacillus. For many months I did not succeed in separating the two organisms by plating and various other devices. I noticed that a high temperature (37 C.) increased the growth of the bacillus, while a low temperature was somewhat unfavorable to it. I noticed also that in McConkey lactose agar tubes, the fungus had a tendency to become more scanty. Making use of these two observations by repeatedly inoculating McConkey lactose agar tubes and keeping some of them at 37 C., others at from 15 to 22 C., I succeeded finally in separating the two organisms, of which I will give here a brief description:

A. *Yeastlike Fungus (Cryptococcus graciloides* n. sp.).—Very delicate yeastlike organism, gram-positive, not acid-fast. Each cell is roundish, or more often oval, with frequently a flasklike shape. In preparations from the cultures, the average maximum longitudinal diameter of most cells is from 3 to 4.5 microns, and the maximum average transverse diameter is from 2 to 3 microns.

Cultural and Biochemical Characters.—Glucose Agar: Minute colonies somewhat streptococcus-like.

McConkey Lactose Agar: Minute colonies, but growth often more abundant than on glucose agar.

Gelatin and Serum: Growth exceedingly scanty; neither of the mediums is liquified.

Lead Agar: No evident darkening of the medium.

Glucose and Other Sugar Peptone Waters: Apparently no production of acidity or gas, but the organism grows extremely scantily in these mediums, and sometimes no growth at all takes place.

Classification of the Organism.—As the fungus is morphologically yeastlike, it comes under the general heading, "Yeastlike Fungi."

This yeastlike fungus never shows presence of asci; mycelium is completely absent; the budding takes place by one budding at a time; the organism does not produce a thick pellicle in fluid-sugar mediums; it should therefore be placed in the genus *Cryptococcus*. The peculiar flasklike appearance often shown by this fungus might be an argument to place it in another genus, the genus *Pityrosporum*, which is said to differ from the genus *Cryptococcus* as follows:

1. The vegetative cells have a flasklike appearance and do not show a well marked double contour.
2. It has not been cultivated.

The genus *Pityrosporum* Sabouraud, 1895, contains two species, *Pityrosporum ovale* Bizzozero, 1882, and *Pityrosporum cantelei* Castellani, 1908. Morphologically the fungus I have isolated is very similar to *P. ovale*, but it differs from it in the fact that it is of smaller dimensions and is cultivable, and, moreover, certain cells may show a double contour. In my opinion the fungus should be placed in the genus *Cryptococcus*.

B. *Bacillus Vermiculoides* n. sp.—This bacillus apparently lives in symbiosis with the *Cryptococcus* I have described; I have separated the two organisms with great difficulty, but I now have the pure cultures of both. The bacillus is of rather large dimensions, its length varying between 2 and 6 microns; it is often curved. It is gram-positive, not acid-fast. The optimum temperature seems to be 37 C., but it may grow, though much less abundantly, at a much lower temperature, 22 C., and even less.

Cultural and Biochemical Characters.—Glucose Agar: Minute colonies somewhat resembling those of a certain streptococcus.

Gelatin: Growth very scanty, or absent altogether; no liquefaction.

Serum: No liquefaction of the medium.

Sugar Peptone Waters: It produces acidity, but no gas in glucose, levulose, maltose, galactose and lactose. There is usually no change in the other sugar-peptone waters.

Litmus Milk: The medium is rendered acid and after a time may become clotted.

Biochemical Reaction of the Associated Organisms.—When sugar mediums are inoculated with a mixed cryptococcus-bacillus culture, acid and gas are produced in glucose and levulose, though very slowly; only acidity in lactose, maltose and galactose; litmus milk is rendered acid and clotted.

RÔLE OF SYMBIOSIS IN CAUSATION OF CERTAIN SYMPTOMS OF DISEASE

Let me remind the reader that I use the term symbiosis *sensu lato;* that is to say, to denote the association of two micro-organisms. There is little doubt that in certain diseases due to specific germs, some so-called typical symptoms are not due to the action of the specific germ per se, but to the action of the specific germ plus a nonspecific germ living in association. Let me bring forth an example such as occurs in everyday practice: scabies. The typical pustular eruption is not caused by the acarus per se; it is caused by pyogenic cocci which apparently find the proper soil to multiply and become virulent on the skin irritated by the acarus; and also the acarus may act as carrier for the pyogenic germs. When persons, such as nurses and surgeons, who wash their hands frequently with disinfectants, become occasionally affected with scabies, pustules are generally absent and the diagnosis may be extremely difficult.

I will mention another condition described and experimentally studied by me some years ago; viz., copra itch. This is a condition found in persons handling copra, and it is caused by a mite present in millions of particles of copra dust. The disease, apart from the presence of burrows, is identical with scabies. The patient complains of terrible itching, and a papulopustular eruption is generally present. The pustular eruption is caused by the pyogenic organisms, not by the mite per se (*Tyroglyphus longior,* var. *Castellanii* Hirst).

Yaws.—In all textbooks the statement is found that one of the typical symptoms is the presence of the large nodules capped by thick, bright yellow crusts. These thick, bright yellow caps are not produced by the specific germ of yaws, *Treponema pertenue,* but by associated pyogenic cocci. If some of the incipient nodules are constantly dressed with mercuric chloride lotion, they enlarge and become the same size as the other nodules, but the yellow crust is practically absent.

Typhoid.—Meteorism, as is well known, is caused to a great extent by defective tone in the walls. According to certain researches I have carried out, however, the great, abnormal distention found in some cases of typhoid may be caused by the association of the typhoid bacillus with other bacilli, especially bacilli of the Morgan group. In two cases in London in which the abnormal distention was extremely marked, the bacteriologic examination of the feces revealed the presence of *B. typhosus* and *B. morgani* closely associated; viz., numerous colonies on McConkey's plates, which seemed to be pure, were composed in reality of the two germs living in symbiosis. Now *B. typhosus* alone produces no gas in any carbon compound, *B. morgani* alone in only a very few; their mixture, in a much larger number.

The Smell of Favus.—The typical smell—so-called mousy smell—found in many cases of favus is well known. From certain experiments that have been carried out, it would appear that it is not due to the fungus of favus directly, but to associated bacteria which find the favorable conditions of growth in the lesions caused by *Achorion*.

CONCLUSIONS

Symbiosis, or the close association of two or more organisms, may play an important rôle in biochemical phenomena and in the causation of certain diseases and certain symptoms of disease. Simple acid fermentation may be apparently transformed into fermentation with production of gas; for example, *B. typhosus* produces acidity, never gas, in maltose, mannitol and sorbite; *B. morgani* produces neither acidity nor gas; the association of *B. typhosus* and *B. morgani* produces acidity and gas.

It seems certain that there are diseases caused by a true symbiosis or association of two organisms, neither of which alone is capable of producing the malady. Trichomycosis rubra, trichomycosis nigra, and stomatitis cryptococcobacillaris are examples of such diseases.

Certain so-called typical symptoms of diseases of which we know the specific organisms are in all probability due not to the specific germ alone but to the association of the specific germ with one or more nonspecific organisms. The moldy or mousy smell of favus is not caused directly by the fungus, but by associated organisms; the typical honey-yellow crusts of yaws seem to be caused by the pyogenic cocci associated with the specific germ, *Treponema pertenue.* The great abdominal distention in certain cases of typhoid is probably due to defective tone in the walls, but may be caused or increased to a certain extent by the association of certain bacilli, as, for instance, *B. morgani,* to the typhoid bacillus. The typhoid bacillus alone does not produce gas in any carbon compound.

THE SIGNIFICANCE OF ACHLORHYDRIA *

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The first essential, naturally, is to establish the fact that achlorhydria exists. The only reliable proof of this is supplied by fractional gastric analysis. A single extraction of stomach contents will not suffice. The gastric secretion must be watched throughout at least two hours after a test meal, for no free acid may be found at the end of forty-five minutes or one hour and yet may appear later on. No symptoms prove or disprove the existence of achlorhydria. Nothing in the physical examination alone determines the activity of the gastric secretion. Even roentgen-ray reports cannot be depended on to settle this question. Only fractional gastric analysis is conclusive.

Once it is determined that the stomach secretes no free hydrochloric acid, a starting point has been found from which to proceed to a diagnosis. We are then in a position to ask what conditions cause achlorhydria or with what diseases it is commonly associated. We look for other evidence, either in the stomach itself or in other organs more or less remote from it, that may help to fix the responsibility for the failure of the gastric mucous membrane to perform its function properly. Thus gradually by the accumulation of data and the consideration of one possibility after another we reach a definite conclusion, so that at last we are able to name the disease that causes the achlorhydria and proceed intelligently to its treatment.

PERNICIOUS ANEMIA

We should think first of pernicious anemia when achlorhydria is found, for, until it has been eliminated, no other cause deserves consideration. The frequency of the association has long been recognized, and attention has been called to it by many different observers. But gradually the conviction has been reached that this association is not only frequent but constant, so constant that no case can properly be called pernicious anemia if free hydrochloric acid is found in the gastric contents. It is a curious fact that achlorhydria may be found long before the blood picture becomes typical, even for years before that time, so that, over a long period, recurring attacks of gastro-intestinal upset, particularly of diarrhea, with constant absence of free hydrochloric acid from stomach contents but without characteristic blood count and smears, may baffle the diagnostician as to their meaning. Finally other symptoms develop, such as progressive weakness, paresthesias in the hands and feet, increasing pallor, and repeated attacks of soreness of the tongue; and sooner or later the peculiar blood count and morphology establish the diagnosis beyond question. On this long continuance of achlorhydria, before other symptoms appear, has been constructed a theory that absence of free hydrochloric acid is the real cause of pernicious anemia. It is suggested that this lack of secretion permits the passage through the stomach into the intestinal canal of organisms such as streptococci or *Bacillus welchii* in such numbers that ultimately they produce their toxin in sufficient quantity to bring about hemolysis and disturbance of blood production. But on the other hand it seems more likely that some toxin, whatever may be its origin, whether produced in the intestinal canal or elsewhere, very early inhibits secretion by the gastric glands, and only later and more slowly affects the structure of the spinal cord, the marrow of the bones and the red blood corpuscles themselves. In other words, it seems probable that achlorhydria, like all the other manifestations of the disease pernicious anemia, is the consequence of some unidentified poison that exerts its influence on the secreting cells in the gastric mucous membrane much sooner than it does on the other structures involved.

Regardless of theories, the point to be remembered is this; whenever persistent achlorhydria is found, one should think first of pernicious anemia present or to come. A careful search should be made for all other evidence to be obtained by history, physical examination, laboratory tests and roentgen-ray reports, before the conclusion is reached that pernicious anemia does not exist. Even then it must be remembered that conclusive symptoms and signs may develop as time goes on, though for months or for years they are absent or indefinite. The truth of the situation can be summed up in this way: When achlorhydria is discovered, one cannot reason from that alone to the conclusion that pernicious anemia has caused it; on the other hand, pernicious anemia cannot be positively diagnosed, no matter what the manifestations are, unless achlorhydria is one of them.

CANCER OF THE STOMACH

Twenty-five or thirty years ago, the value of achlorhydria in the diagnosis of cancer of the stomach was strongly impressed on students. Even today, several of the standard textbooks on medicine continue to lay stress on the frequency with which it occurs in this disease. But as a matter of fact it has about the same importance in the recognition of gastric cancer as has the discovery of a palpable tumor. When achlorhydria is found, cancer of the stomach has progressed so far that this sign is no longer needed for diagnosis. Gradually, as the neoplasm grows, the secretion of free hydrochloric acid decreases. This is due to several factors, but principally to the toxin it produces, which either inhibits or destroys the secreting cells. Another arresting influence is the gastritis gradually induced by retained and decomposing food and by bacteria. But complete anacidity, though it does ultimately occur in nearly all cases, is a late and almost a terminal finding. To conclude, because free hydrochloric acid is found, that the condition cannot be cancer of the stomach, and to consider achlorhydria essential to the diagnosis, is therefore a fatal error.

This does not mean that fractional gastric analysis affords no aid in the recognition of this disease. On the contrary, it gives most valuable information; for it reveals not only decreased secretion of greater or less degree, but also impaired motor power, with a variable amount of food retention, and so calls attention to an interference with the two most important functions of the stomach. In every case of chronic gastric disorder, no matter what suspicion has been created by other data, fluoroscopic examination and roentgen-ray films are essential to diagnosis. No reliable conclusion can be reached without them. That gastric secretion persists should not lead to delay in securing whatever information the roentgen ray can give. One should not wait too long about this investigation because absence of free hydrochloric acid, the classic sign so long impressed by the textbooks, has not been discovered as expected.

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The truth about the value of achlorhydria in the diagnosis of gastric cancer can be summed up as follows: When, with a more or less prolonged history of indigestion, with loss of weight, strength and color, whatever the physical examination shows, achlorhydria is found after a test meal, this certainly tends to confirm the impression that the underlying pathologic condition is cancer of the stomach. But if with all other conditions the same, fractional gastric analysis shows free hydrochloric acid within normal limits or below normal limits but still present in all extractions after a test meal, this must not be interpreted to mean that cancer is not the cause of the other symptoms and signs. In any event, roentgen-ray films of the stomach afford the final proof; and even though exceptionally they fail to show what is present or seem to show what is not actually present, in the vast majority of cases the information they give is reliable.

CHRONIC GASTRITIS

What is the evidence in a given case to prove that achlorhydria is due to chronic gastritis?

1. The other findings from gastric analysis besides the absence of free hydrochloric acid, particularly the presence of abundant mucus in the fasting contents; the poor trituration after the Ewald test meal; the deficient secretion as shown by the thick, sticky character of the material recovered; frequently, the presence of food fragments from a previous meal, indicating disturbance of motor power as well as of secretion, and at all extractions an excess of mucus, mixed with the food or separate from it. This mucus is the characteristic feature of chronic gastritis, and its persistent association with achlorhydria at each extraction practically makes the diagnosis.

2. The finding in history or physical examination of the factors that produce chronic gastritis. These are: (*a*) habitual indiscretion in the taking of food and drink, as regards quantity, quality, seasoning, temperature, trituration and regularity of meals; (*b*) conditions that produce stasis in the circulation through the gastric walls, such as hepatic cirrhosis or chronic passive congestion from loss of cardiac reserve; (*c*) chronic swallowing of infectious material, of pus and bacteria, from foci in the gums or teeth, particularly from pyorrhea and pyorrheal pockets, or from diseased tonsils or sinus, or from trachea or bronchi. Equally important is the negative evidence when achlorhydria is due to chronic gastritis. The general health is usually well maintained, even though the gastric symptoms are of long duration. There is not the loss of weight and strength and color that characterize cancer; pain after food is exceptional, and roentgen-ray films show no defect in the stomach's contour. On the other hand, the blood changes are never found that characterize pernicious anemia, the progressive asthenia, or the paresthesias in hands and feet. Speaking from the standpoint of achlorhydria, chronic gastritis is a common cause; but, from the standpoint of chronic gastritis, complete absence of free hydrochloric acid is not as common as a reduction of the secretion, in connection with the other peculiarities in the gastric analysis already described.

CHRONIC GALLBLADDER DISEASE

That there is a definite relation between achlorhydria and chronic gallbladder disease was first called to attention by Leva in 1893. Following his observation, numerous others were reported at intervals, most of which are found in German literature. But only during the last decade have systematic investigations been recorded in sufficient number to make a definite conclusion possible. Reviewing these investigations in a paper published in the early part of 1925, von Aldor states that, on the basis of a large number of cases observed in different clinics by different men, it is proved that hypochlorhydria of marked degree or complete achlorhydria occurs in about half the patients who have chronic cholecystitis. In this country the largest number of cases reviewed with reference to this point is in the paper by Blalock, who reports that at the Johns Hopkins Hospital between 1889 and 1924 there were 735 patients operated on for chronic gallbladder disease. In only 206 of these were gastric analyses recorded, but among these, 23 per cent showed achlorhydria. No mention is made of patients with hyposecretion. In the wards of Stanford Hospital during the five years from Jan. 1, 1920, to Jan. 1, 1925, there were eighty-four patients operated on for gallbladder disease, in whom the diagnosis was confirmed by gross and microscopic examination of the gallbladders removed. Among these there were fourteen in whom, for one reason or another, no examination was made of the gastric secretion. But of the remaining seventy, six showed a hypersecretion; twenty-seven, a secretion within normal limits; thirty-one, a hyposecretion of marked degree, and six, a complete achlorhydria, making thirty-seven out of seventy cases in which a great deficiency or absence of secretion was found.

The question next arises, Why should there be any relation between achlorhydria and gallbladder disease? Three different thories have been advanced in explanation:

First, it has been asserted that an activating hormone is produced in the bile tract or in the duodenum that is essential to the stimulation of secretion by the acid-forming cells of the stomach, and that this substance is destroyed by gallbladder disease. But such a hormone has never been definitely demonstrated; gallbladder disease does not always produce achlorhydria, and even after removal of the gallbladder, achlorhydria rarely if ever results. With regard to the last point, an interesting report was published by Dahl-Iversen, in 1924, from the Animal Physiological Institute at Copenhagen, of which Møllgaard is director. He found that in many experiments on dogs, moneys and rabbits, removal of the gallbladder did not seem to modify in any way the secretion of free hydrochloric acid.

The second theory is that achlorhydria is a reflex due to the common innervation of the gallbladder and stomach, so that what impairs the function of one impairs likewise the function of the other. The objections to this are the same as to the hormone theory: that gallbladder disease and achlorhydria or gastric hyposecretion are not inevitable associates, and that even the removal of the gallbladder does not inhibit gastric secretion.

Third, the theory advanced by von Aldor, and the most likely one of all, is that chronic gastritis is associated with a certain proportion of the cases of cholecystitis, and that in these will be found not only achlorhydria but an excess of gastric mucus that constitutes the diagnostic feature. This theory will account also for the cases showing hyposecretion without complete suppression, and will explain why many show no change in secretion, simply because no chronic gastritis coexists. It will also explain the occasional case in which gastric secretion recurs after the diseased gallbladder is removed, because coincidently the gastritis has disappeared. The general impression, however, among all observers throughout the literature reviewed is that if achlorhydria exists before removal of the gallbladder, it persists afterward as well.

SUBACUTE COMBINED DEGENERATION OF THE SPINAL CORD

It is under the title of subacute combined degeneration of the spinal cord that Collier describes in his article in Oxford Medicine the condition commonly known in this country as combined sclerosis of the cord. The symptoms and signs of this disease are exactly the ones that are found so frequently in the course of pernicious anemia and that constitute one of the characteristic features of it. There are subjective sensations, such as tingling, numbness and "pins and needles" feelings in the arms and legs, with minor evidences of loss of power, such as difficulty in buttoning the clothes or in holding a pen for writing, or weakness of the legs and dragging of the feet in walking. It is important to remember, however, that such symptoms as these may occur in a patient whose blood shows no marked anemia, and may progress through all the signs characteristic of locomotor ataxia, even to a fatal issue, without any evidence of pernicious anemia. On the other hand, it is Collier's opinion that this type of anemia does occur ultimately in every case of combined sclerosis, even though the characteristic blood changes may be delayed for years during which the disease of the cord persists. It is interesting to note also that in pernicious anemia, during the periods of remission, no matter whether spontaneous or induced, the evidences of disease in the central nervous system do not improve or change in any way, nor does the achlorhydria disappear.

To come back now to the subject under consideration, it has been discovered recently that practically every case of combined sclerosis of the cord shows achlorhydria. Attention has been called to this point particularly by Hurst of London, who reported, in 1922 and 1923, ten cases under his observation, all of which showed persistent achlorhydria. Vanderhoof has also emphasized that achlorhydria is practically as invariable in patients with combined sclerosis as in those with pernicious anemia, but that the spinal disease may run a long and severe course and even terminate fatally before the definite blood picture of pernicious anemia appears. Woltman says that in only one third of patients with subacute combined sclerosis was pernicious anemia found; but continued observation of these cases over a long period proves that it ultimately develops.

All of this knowledge leads the clinician to be very wary about telling a patient who shows achlorhydria that this is of no importance. As Vanderhoof says, every person whose stomach secretes no free hydrochloric acid has a potential case of subacute combined sclerosis of the cord or of pernicious anemia. This brings us back to the opinion expressed when discussing pernicious anemia, that achlorhydria is the first manifestation of the direful influence of some toxin, acting on the gastric secretory cells, and that this first effect may be the only one for months or years, before finally evidence appears that this same toxin has attacked the central nervous system or the blood forming organs, or both.

NEUROSES

After all that has been said, it is well to recall that the absence of free hydrochloric acid from stomach contents may not always mean pernicious anemia, or malignant disease of the stomach, or chronic inflammation of the gastric mucous membrane, or gallbladder disease, or disease of the spinal cord. For there remains a group of cases in which apparently there is nothing else to explain the achlorhydria except a disturbance of innervation. Such cases have long been described as purely functional. In these the absence of gastric secretion has been said to persist for long periods without disturbance of the patient's general health or digestion, or at most has resulted in temporary spells of greater or less gastric discomfort or in recurring attacks of diarrhea. More seems to depend on whether the motor as well as the secretory function is depressed; for, if motility remains normal, no symptoms usually arise. There are several general nervous conditions with which this suppression of gastric secretion is commonly found associated.

First in frequency comes visceroptosis with neurasthenia, commonly known as Glénard's disease. It is probably not the low position of the stomach that disturbs its secretion, but rather the faulty innervation of its secreting glands. The same deficiency leads to poor motor power, with atony and dilatation, which, more than the absent secretion, causes the disturbed digestion of which these patients complain. Achlorhydria is found in Glénard's disease with sufficient frequency to make it appear probable that it may be a true consequence; but visceroptotic patients are not exempt from pernicious anemia, cancer of the stomach or gallbladder disease, so that one must always be on the alert and must not conclude prematurely that the absence of free hydrochloric acid is fully explained by the gastroptosis or by the accompanying neurasthenia.

Second, neurasthenia without visceroptosis has been charged with the responsibility for achlorhydria, which is then attributed to lack of proper supply of nervous energy to the stomach, even when its position is normal. The history in such a case is one of long-continued overwork, physical or mental or both, or of prolonged emotional disturbance, such as grief, worry or melancholy. But much care needs to be exercised in investigating every other possible cause for achlorhydria, before neurasthenia is accepted as the right one. No one can deny that the relation is possible, but skepticism as to its frequency is not only justifiable but advisable.

Third, hysteria must be kept in mind, particularly that type of it which has been described as anorexia nervosa. These patients usually present other characteristic manifestations besides the ones concerned with digestion, such as disturbances of sensation, of the special senses and of the motor system. When achlorhydria is found in the course of a routine investigation made to explain a dyspepsia, some of these other peculiar symptoms and signs, as well as aerophagia or a globus hystericus, are sufficient to give the clue as to why gastric secretion is absent.

What shall we say about these so-called gastric neuroses? Certainly experience teaches that absent secretion or marked deficiency of secretion is a much less common consequence of disturbed innervation than is hypersecretion. And if we admit that achlorhydria may be purely functional at the outset, who knows that if it persists it may not lead to changes in the blood or in the spinal cord, because of increased toxins that its absence permits to develop in the intestinal tract? It seems reasonable to conclude at least that achlorhydria never occurs in the normal individual, and that it may be the forerunner of several vital ailments has been positively proved. Can we, therefore, ever regard its discovery with complacency?

The statements in this paper are based largely on personal observations in medical wards during the last twenty years and also on the study of the experience and researches of other men.[1]

Shreve Building.

THE EFFECTS OF AN EXCLUSIVE, LONG-CONTINUED MEAT DIET

BASED ON THE HISTORY, EXPERIENCES AND CLINICAL SURVEY OF VILHJALMUR STEFANSSON, ARCTIC EXPLORER

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The dietetic observations and experiences of Vilhjalmur Stefansson during his career as an arctic explorer are worthy of careful scrutiny by students of nutrition. Because of his contributions, he is entitled to prominence in many departments of science, among them anthropology, geography, geology, oceanography, languages and comparative religions. Whether reading Stefansson's books, attending his lectures, or in private conversation with him, one is impressed not only by his broad knowledge of biology but also by the keenness of his observations and deductions in the domain of metabolism, particularly as applied to the science of practical dietetics. An anthropologist by training, an arctic explorer by choice, he became a student of nutrition by necessity. Perhaps there is no other man living today whose experimental studies have been so well controlled and done on so large a scale. His laboratory was the arctic circle, his experimental subjects human beings, and his experimental material, meat.

This paper reviews the medical history of this unique man. It is hoped that the facts gleaned from the study of his arctic dietetic regimen and body physiology may throw additional light on a subject about which our knowledge is still somewhat vague and controversial; namely, protein metabolism.

During the month of September, 1922, I made a medical survey of Mr. Stefansson. He suggested at that time that the facts elicited from the studies might be of sufficient scientific interest to warrant publication. The present paper represents the work done on him at that time, amplified by a clinical survey of his condition some two years later.

MEDICAL HISTORY

Stefansson's paternal grandfather and grandmother lived to a very old age, the exact figures not being available. His maternal grandfather died young, through drowning, the maternal grandmother living to the age of 90. His father died at 62, his mother being still alive at 82, though blind since 1916. Two sisters and one brother are living and in good health.

He was delicate during childhood. Born one year before a famine, for the greater part of one year he lived mainly on fish. At 10 years of age, he had a severe attack of measles. While in college, he had an attack of mumps. At 14 one tooth was extracted. Two molars were filled in 1906. No further dental trouble occurred until recently. During the winter and spring of 1918, while in the Far North, he had typhoid fever with pneumonia and two attacks of pleurisy, and spent three months in bed. During the first three or four days of the headache and fever, at the onset of the typhoid, he was in camp. He then walked about 40 miles against a blizzard. He was given low caloric feeding until, taking matters in his own hands, he insisted on being hauled by sled about 300 miles from Hersalul Island on the arctic coast of Canada to the Episcopal Hospital at Fort Yukon. During the journey, Mr. Stefansson ate frozen raw fish and later, large meals of caribou meat and fish, sometimes boiled and sometimes raw and slightly frozen. His strength returned as soon as this dietary was adopted. The journey took twenty-seven days, during which time he fully recovered from typhoid and gained 30 pounds (13.6 Kg.).

Out of eleven and one-half years in the polar regions, Mr. Stefansson lived about nine years on a meat diet; that is, meat and water. For at least six years of the nine, he lived entirely without salt. The longest continuous period without food, other than meat, was about nine months.

At the present time, Mr. Stefansson is in excellent health, working intensively in writing books and giving lectures. He travels a great deal, takes practically no exercise and eats anything placed before him, but his tendency is to eat more meat than the average person. Since returning to civilization, he has had a tendency to constipation and has infrequent colds, but is otherwise never ill.

In 1922, when he was 43, he weighed 156 pounds (70.8 Kg.). He was 5 feet 11 inches (180.3 cm.) tall, and well developed and nourished. He looked his years, but no older. The hair was thick and brown with a dry scalp. The face was somewhat asymmetrical. The eyes were normal. The von Graefe, Möbius and Dalrymple signs were not present. The pupils were equal and reacted to light and in accommodation. The ears and nose were normal. The tonsils were medium sized and cryptic, with a slight purulent secretion on aspiration. The teeth, objectively, were in good condition, with healthy gums and normal gingival margins. There was no struma. The posterior cervical glands could not be palpated.

The chest measurements were: inhalation, 37 inches (94 cm.); exhalation, 34½ inches (87 cm.); at rest, 35½ inches (90 cm.). A pea-sized cyst was present on the third rib to the right of the sternum. The lungs were normal throughout to auscultation, palpation and percussion. Fluoroscopy showed peribronchial thickening. The apex beat of the heart was mediad to the left maxillary line; the aortic second beat equaled the pulmonic second; no murmurs were elicited. There was normal response to cardiac functional tests. The pulse was 60, equal, regular, and synchronous. The vessel walls were barely palpable. There was no tremor of the outspread fingers.

The systolic blood pressure was 115 and diastolic, 55, in both arms.

Slight eczema could be seen between the toes, on the right instep and behind the right ear.

The tache cérébral was normal. No dystrophy or cyanosis of the nails was present.

The crines of the abdomen were triangular; the hirci were of the female type. No tenderness or masses were felt.

The liver was not felt, nor was the dulness increased. The spleen was not palpable. The gonads were normal.

The knee jerks were active and equal. The Babinski reflex was negative.

Slight external hemorrhoids were present. The prostate was normal. The spine was straight, with free and painless movements.

Men in the various specialties have examined Stefansson, and reports have been entirely negative. Laboratory examinations of the blood (including morphologic, biologic, and chemical, urine, stool, basal metabolism and kidney function tests were normal.

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[1] These are recorded in a bibliography which appears in the author's reprints.

The following facts regarding Stefansson's life in the Far North are noteworthy:

1. He spent altogether eleven and one-half years within the arctic circle.
2. He lived for a number of days, totaling nine years, on an exclusive meat diet.
3. He lived for nine successive months on an exclusive meat diet.
4. He reached his maximum weight while subsisting on meat (fish).
5. His sense of physical and mental well being was at its best during that period of his life.
6. He found that the exclusive meat diet worked as well when he was inactive as when active, and as well in hot weather as in cold.
7. Constipation was never present. One month's entire absence from exercise produced neither constipation nor muscular weakness.
8. His hair thickened, and his scalp became healthier.
9. Teeth decay was apparently much less rapid.

Stefansson avers that not a single case of constipation was observed in 600 exclusively meat-eating Eskimos for a period of three years.

COMMENT

Stefansson has remarked in his book "The Friendly Arctic" that unless it is religion there is no field of human thought in which sentiment and prejudice take the place of sound judgment and logical thinking so completely as in dietetics.

His experiences in the Far North should give an intensive stimulus particularly to metabolic inquiry as regards the protein modality. There is an apparent need of a recasting of clinical dietetics based both on his experiences and on the newer knowledge of the rôle of the different sugars reaching the colon in the production of biochemical reactions in the intestinal tract.

Neither Stefansson nor any of his men, so far as we could determine, suffered any ill effects from long continued meat diet.

Stefansson affirms that his observations on the health and longevity of Eskimos led him to the conclusion that the high protein diet has no deleterious effects on their circulation or kidneys. He does feel, however, that the mixed diet to which they have resorted in recent years is making them prematurely old and is producing infirmities in those past middle life similar to those of civilized communities. He considers the prime cause of this to be increase of constipation that has everywhere accompanied the adoption by the Eskimos of imported foods.

I have had two patients who gave a history of living on practically an exclusive meat diet for a period of several years. One of these men was about 45 years of age but looked several years younger. He ate practically nothing but beefsteak three times daily. He boasted of the fact that he never took exercise, and without any previous training could run a hundred yards in twelve seconds, or swim five miles without fatigue. The other man, aged 55, was, when last examined about a year ago, in excellent condition. Neither of these men had symptoms of intestinal toxemia, kidney disease or cardiovascular disorders.

The foregoing data, however inadequate in their scientific check up, can only lead us to question the commonly accepted facts regarding a high protein diet.

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VERTIGO

ITS INCIDENCE IN ENDOCRINE DISORDERS *

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Vertigo is one of the most sudden and distressing symptoms that the human body experiences, yet the location of the cause is still obscure. This in part is due to the intermittent character of its manifestation, and in part to a lack of clarity of definition to the condition to which the patient applies the term vertigo, giddiness or dizziness. While we have been accustomed to regard the symptom as vague and lacking outline, the fact remains that it must be caused by a direct inhibition of the labyrinthine semicircular canals.

The term equilibrium, as applied to the condition of the body, whether at rest or in motion, indicates a state in which all the skeletal muscles are under control of nerve centers, so that they combine, when required, either to resist the effect of gravity or to execute some coordinated motion. The preservation of equilibrium is manifestly of fundamental importance in animal life, and we find, accordingly, several mechanisms sharing in this function. That the motor coordinating centers may act properly, they must receive sensory impressions conveying correct information of the relative position of the body at any given time. The integration of these sensations may be characterized as the sense of equilibrium, and it is probably not going too far to assume that every known sensation contributes to this fund of information. Thus, in ordinary life the contact of the surface of the body with various objects is a common source of information as to our relation with the environment. Again while standing upright, and still more when in motion, the muscular sense is active in appreciating the tension, active or passive, of the muscles. As an example, in the erect position, with the eyes closed, a writing point attached to the head will show that the body sways in a peculiar manner, indicating successive contraction of different groups of muscles.

The founder of the modern theory of the functions of the nonacoustic labyrinth was Flourens,[1] who found that, after lesions or excitation of the semicircular canals in pigeons and mammals, characteristic forced movements were obtained. Therefore, we now recognize that the labyrinth is composed of three distinct sense organs: the cochlea with the organ of Corti, for which the adequate physiologic stimulus consists in sound vibrations; the canals with the cristae acousticae, which are physiologically stimulated by the movements of the head; the vestibular saccules with the maculae, the stimulus of which is the movement of the otoliths, and particularly the variations in the rate of the rectilinear movements, both on the horizontal and on the vertical planes. The cochlea is the organ of hearing; the canals are the organs on which depend the experimentally produced sensations of rotatory and galvanic vertigo, and which normally influence the complicated function of equilibrium by means of obscure sensations: the saccules are the organs on which depend the subconscious sensations that are normally ours of the direction of the line of gravity, and thus of the position of the body in relation to the environment.

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* From the Evans Memorial (No. 128-A-74).

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[1] Flourens: *Recherches expérimentells du système nerveux*, Paris, 1842.

Labyrinthine vertigo, whether produced experimentally or pathologically, is always rotatory. It is always associated either with nystagmus or disturbances of equilibrium. The reverse of this statement does not hold, however, as disturbances of equilibrium may occur without vertigo. All forms of vertigo may be associated with nystagmus, but some forms do not necessarily exhibit this relation; i. e., the ocular and muscular forms. We know, however, that when there is a loss of function of two sets of these organs (static labyrinth, eyes or muscles), there will be a relative increase in disturbances of equilibrium and orientation: while a permanent lesion of only one of the three sets of sense organs will eventually be corrected by the other two, perhaps not entirely, but sufficiently so for all practical purposes.

It is clear, then, that the sense of equilibrium is served by various sense organs: a complete discussion of this function would entail a consideration of the whole field of nerve-muscle physiology. There is, however, good reason for believing that there is a special sense organ for determining the position and direction of movement of the head and, by inference, of the whole body. The terminal organ of this sense apparatus of equilibrium is found in the system of semicircular canals of the internal ear.

The present paper offers the results of the investigation into the relative incidence of vertigo in disorders of the endocrine system. The report is based on the analysis of more than 1,100 consecutive cases received at the Evans Memorial Hospital for diagnostic study, all of which presented stigmas of possible endocrine disease. The methods of analysis have been described elsewhere in detail,[2] and in brief may be said to comprise the interpretative collation of results from very thorough and comprehensive clinical and laboratory observations.

Of the more than 1,100 patients examined, 734, or 66 per cent, gave sufficient evidence of deranged metabolic activity to justify the diagnosis of a probable endocrine malfunction, while 377, or 34 per cent, presented a primary pathologic condition that was nonendocrine in origin. The incidence of vertigo as a chief complaint or prominent symptom is not widely different in the two groups, that of endocrine malfunction exhibiting 14.9 per cent positive cases, while the nonendocrine group shows 20.2 per cent. Detailed analysis, however, discloses certain points of interest. The endocrine data are given in table 1.

TABLE 1.—*Observations in Endocrine Group*

Diagnostic Group	Total No.	With Vertigo	Per Cent
Pituitary	320	82	26
Thyroid	145	37	26
Gonad	157	40	25
Unclassified	82	20	24
Suprarenal	12	1	8
Pluriglandular*	18	2	11

* As the result of surgery.

The percentage presenting positive findings is surprisingly uniform, the suprarenal and pluriglandular groups constituting the sole exceptions. Conceivably here the relatively small number of cases in these groups may be the cause of the deviation rather than any intrinsic property of the syndrome. Certainly this is probably true of the so-called pluriglandular group. The consideration of the nonendocrine moiety supplements the foregoing. The allocation of these cases to certain broad diagnostic groups is given in table 2.

Four of the groups given show an incidence identical with that of the important endocrine units. Three of these are conditions in which toxemia is recognized as a major and characteristic feature. The coincidence of the psychoneurotic group is, in my opinion, one more piece of evidence pointing to a probable element of disturbed metabolism in the complex etiology of these conditions. The unpublished observations of this laboratory show numerous other confirmatory correlations. Turning again to the other groups, one finds the cases of lesion of the central nervous system showing almost twice as frequent an incidence as any other group, while the residual cases of nonendocrine pathologic changes might be termed as functional vertigo, these cases arising from stimuli from other organs or from general conditions in the body.

TABLE 2.—*Observations in Nonendocrine Group*

Diagnostic Group	Total No.	With Vertigo	Per Cent
Cardiorenal	59	13	22
Neuroses and psychoses	46	13	28
Syphilis	26	7	27
Focal infections	47	12	26
Lesions of the central nervous system	37	15	41
Miscellaneous	162	16	10

The complex body functions appear to be regulated in no small measure by the organs of internal secretion, a deficiency or an excess of one of these important correlators being able seriously to upset metabolic equilibria. This in part is supposedly controlled by the vegetative nervous system: the vagus or stimulating and the sympathetic or inhibitory system. Therefore, actual derangements of the metabolic processes follow almost any deviation from the normal of health; and, while our knowledge is limited by the paucity of the intermediate steps of the paths of metabolism, we have observed in this study the constancy of a high residual nitrogen, a raised lymphocytosis and an increased eosinophilia. We know also that the functions of the internal organs may be disturbed by toxic substances which act as direct deterrants to metabolism. Thus, in the 10 per cent of the miscellaneous group we may well include cases of toxemia or of disturbed metabolism, as we recognize that the body functions are regulated not alone by nervous influences but also by chemical substances that pass from the tissues directly into the blood stream.

A few cases may serve to illustrate the dependence of presenting symptoms in the metabolic and toxemic cases.

The clinical picture of a pituitary type can be well illustrated by the following case:

Miss C., aged 64, first consulted me for vertigo in 1924. The disturbance developed more than a year before, when the patient was dizzy on awakening at night, remained dizzy and nauseated during the following day, and seemed, at the same time, to lose strength on the right side of the body. There had been subsequent attacks at irregular intervals. She now found herself turning to the right in walking. As a child and young woman, when getting out of bed quickly she would feel faint and very dizzy. The family history was negative except for three uncles with tuberculosis. The patient had had frequent headaches during adolescence and early womanhood; scarlet fever in childhood; an arthritic condition in adolescence; an otitis media at 10 years of age, and tonsillitis several times, until the tonsils were cleanly removed ten years before the time of examination.

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[2] Rowe, A. W.: Boston M. & S. J. 190:291 (Feb. 21) 1924.

The physical examination showed nothing remarkable: In the urine there was a limited solid elimination and a slightly raised residual nitrogen. The blood was substantially normal, with a slight increase in the leukocytes. The Wassermann reaction was negative. The phenolsulphonphthalein test showed diminished elimination. The alveolar carbon dioxide was normal. The patient's vital capacity was about two thirds of the normal, and she was 22 per cent overweight. The metabolism was —13 per cent; the blood pressure, 150 systolic and 80 diastolic. The eyes showed enlarged blind spots with contracted fields. The roentgen-ray examination of the head was negative. The Bárány test showed the canals hypersensitive but not pathologic. The sugar tolerance was negative to 40 Gm. The diagnosis on these facts was bilobar pituitary failure. Under bilobar medication, the patient has improved and can keep free from vertigo entirely by remaining under medication. The laboratory picture has coincidently resumed normality. Generally, the commonest type of pituitary aberration is hypofunction of the anterior lobe, combined with hyperfunction of the posterior.

The thyroid type might be described by the following case:

L., a man in the early fifties, fatigued easily on the least exertion. He was very nervous and was concerned in many more affairs of life than the ordinary man of his years. He was much underweight for his height and had very little opportunity for any physical exercise. Together with the vertigo, he had a disturbing tinnitus in both ears, which did not seem to lessen under normal conditions. The vertigo came over him in waves and at times was so severe that he was forced to lie down. He was not nauseated, and at times on closing the eyes the head seemed to clear. Then, again, this did not help. Sometimes the vertigo was very indistinct and rather more like giddiness. He felt that his work was much more of a tax to him than formerly, and at times he had much difficulty in concentration. He never had any trouble in navigation, but he did think that he was more short of breath than he was formerly.

The physical examination showed a metabolism of —24 per cent; pulse, 68; temperature, normal. The blood pressure was 108 systolic and 60 diastolic. Otherwise the examination was negative, except that there was a high eosinophilia and the Bárány test showed an active reaction both to the chair and to the caloric test. There was also a high residual nitrogen and a lymphocytosis. The diagnosis was thyroid failure with the hypertension that so frequently becomes manifest in the later stages of this condition. Following thyroid medication he improved very quickly, but as soon as he stopped medication, thinking himself quite cured, the symptoms would reappear with distinct frequency. He found that he had to use the medication as a food rather than as a medicine.

The cardiorenal type might be described by the following case:

Miss S., aged 39, besides her deafness of a catarrhal nature had had sick headaches for ten years; of late they were more severe and at times were accompanied by difficulty with the vision. She also had much pain through the back of the head, streaming into the neck and on to the vertex. Sometimes the severity would be sufficient to cause vomiting. The attacks not only were becoming more frequent, but had an added discomfort of extreme weakness of the limbs, nervousness and mental depression. The patient was at times easily confused, and if she had to hurry she had increased pain in the head and at times was unable to walk straight. The bewilderment extended to dizziness and to vertigo, so that on arising she was liable to fall over backward and on getting out of bed or of a chair had to wait for a second so that she might become accustomed to the new position to avoid toppling over.

The physical examination showed some abnormalities in contour of the chest, with a soft blowing systolic murmur at the apex transmitted to the axilla. The teeth were false, and besides this she showed a scar of a former laparotomy operation. The knee jerks were slightly decreased. The urine showed a low volume with a high specific gravity. There was a trace of albumin, and in the sediment were found an occasional blood disk and granular casts. The nitrogen elimination was low; the balance, however, was entirely normal. The blood showed a marked lymphocytosis and a slight eosinophilia. The Wassermann reaction was negative, while the phenolsulphonphthalein output was low. The alveolar carbon dioxide was normal, the patient was below weight, and the vital capacity was much below normal. The basal metabolism was —4 per cent, but the pulse was rapid and she had a slight elevation of temperature. The blood pressure was 110 systolic and 65 diastolic. General care and treatment helped the patient somewhat, but, of course, the condition is probably incurable.

The psychoneurotic type is well illustrated by the following case:

Mrs. D., aged 33, American born and well educated, had been troubled with headaches since 14 years of age. Associated with the headaches was a soreness externally, easily detected by pressure. Dizziness usually accompanied the headaches, and objects moved at times; then, again, they were stationary. Closing the eyes generally gave relief. Noise of the slightest type seemed to be sufficient to begin the dizzy attacks, and she always preferred to be perfectly quiet. At times there was much throbbing in the temporal region, together with pain in the lower right quadrant of the abdomen, and cold feet and clammy hands. She slept poorly and could neither read nor sew. She had had several children and one miscarriage. Her mother died of diabetes. She said that she had had no previous illnesses, but her general make-up and appearances were those of a person who worried not only about herself but of the misfortunes of others as well.

The physical examination showed infected tonsils and poor teeth. Otherwise there was nothing remarkable. The urine and the blood were normal except for a high residual nitrogen, with elimination and balance good, the blood showing a high white count and 70 per cent hemoglobin and a 4 per cent eosinophilia. The blood was leukoid in character, with 76 per cent neutrophils and 2 per cent myelocytes. The Wassermann reaction was negative; she was 15 per cent overweight. The basal rate was —1 per cent with normal findings, while the Bárány test showed a very active static labyrinth, together with negative roentgenograms of the skull. I might add that we were unable to find any definite appendix disease. Apparently the patient stressed this symptom from the fact that a close friend died from the disease. Again, the patient would seem to lay more stress on the vertigo, when, on changing her thought, the vertigo would be less noticeable. The picture of the neurosis was much different following the removal of the infected teeth, and following the removal of the tonsils, her husband stated that she was much better, although the patient herself was quite diffident as to the results obtained for a long period.

Vertigo is certainly a common symptom in aural practice, much more common, in fact, than one might judge from the voluntary history given by the patient. The average patient can think of vertigo as caused by gastric attacks, a mental association attributable in the first place, no doubt, to the occasional accompanying nausea and vomiting; but an equilibratory disturbance seems too irrelevant in connection with any ear disease.

As to the results that can be obtained in the treatment of vertigo, they will be as various as the character of the lesion causing them. The degree of vertigo is by no means a measure of the gravity of the underlying disease, because we may have a very slight vestibular disorder with most distressing vertigo; we may, on the other hand, have only a mild vertigo with a grave lesion of the central nervous system.

CONCLUSIONS

1. Vertigo is distinctly an aural symptom.
2. The eighth nerve, comparatively invulnerable by injury from without, seems susceptible to toxic agents reaching the ear by the blood or lymph streams.

3. Vertigo in young persons is ordinarily transient and unimportant; vertigo in elderly folk is apt to be recurrent and of serious moment.

4. The only endocrine connection is through a lowered vital function with a concomitant lowered metabolism, emphasizing the fact that vertigo must of necessity be regarded as an end-result of metabolic error.

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ABSTRACT OF DISCUSSION

Dr. E. R. Lewis, Los Angeles: Dr. Drury has collected data as to the incidence of vertigo in a group of cases termed "endocrine disorders." I do not get much information from this term. It conveys to me about as much as to say that a patient has "a kidney" or "a blood pressure." A more comprehensible analysis of what is meant by "endocrine disorders" is needed before one can make practical application of the findings to the solution of problems presented by persons who are ill. Dr. Drury refers to a difficulty that has come to the attention of all those who have much to do with the study of vertigo. Many use this term interchangeably with dizziness, giddiness, faintness; in my own experience, diplopia, transitory obscuration of vision, and sudden mental confusion have also been described as "vertigo." Some years ago, Cheatle expressed a conviction that turning resulted in what is termed "cerebral confusion"—not a special sensation in the ordinary meaning of the term "special sense." While it is true that vertigo often occurs coincidentally with tinnitus, visual confusion, equilibratory disturbance and other transitory cerebral disturbances, it must be recognized as evidence of special sensing initiated by irritation or stimulation of a special sense tract; and the end organs, nerve tracts and central nervous system sense centers must be regarded as no less a special sense apparatus than those subserving vision or audition. This special sense apparatus enables one to discriminate with respect to direction and increment or decrement of turning movements to which the head is subjected; and, with the cooperation of the deep sense and visual sense, to make suitable body adjustments to turning movements. The study of vertigo requires meticulous care in analyzing the component elements of sensory disturbance entering into the picture. For example, stimulation of a normal vestibular apparatus causes subjective sensation of rotation—vertigo; disturbance of equilibrium—staggering, falling; visual disturbances—nystagmus, blurring; cardiovascular disturbance—pallor, increased pulse rate; gastrointestinal disturbance—nausea, vomiting; glandular disturbance—sweating, sialorrhea, and sympathetic nervous system disturbance—faintness. This general pattern of reaction is touched in on whenever impulses are initiated which traverse the afferent tracts of the vestibular system. The extent to which such impulses traverse this pattern depends on their intensity; their point of entrance into this system makes no difference with respect to the resulting reactions. With this clearly in mind, it is possible to formulate a working concept that will aid in understanding the meaning of vertigo.

Dr. Dana W. Drury, Boston: I believe that in vertigo, as in other ear diseases, every single sign and symptom, whether great or small, should be sought out and given proper evaluation if we are to get the proper picture. Each sign and symptom falls into its place like the pieces of a picture puzzle.

Diabetes.—It must not be forgotten that diabetes indicates a breakdown in the metabolism not only of sugar, but of protein and fat as well. Unfortunately, in clinical work the term diabetes is used to include at least two entirely different conditions, with the result that much confusion prevails. It is often stated that diabetes in the young is a much more serious condition than diabetes in the middle aged and elderly. This, however, does not appear to be strictly true.—MacLean, Hugh: Carbohydrate Metabolism in Health and Disease, *Lancet*, June 12, 1926.

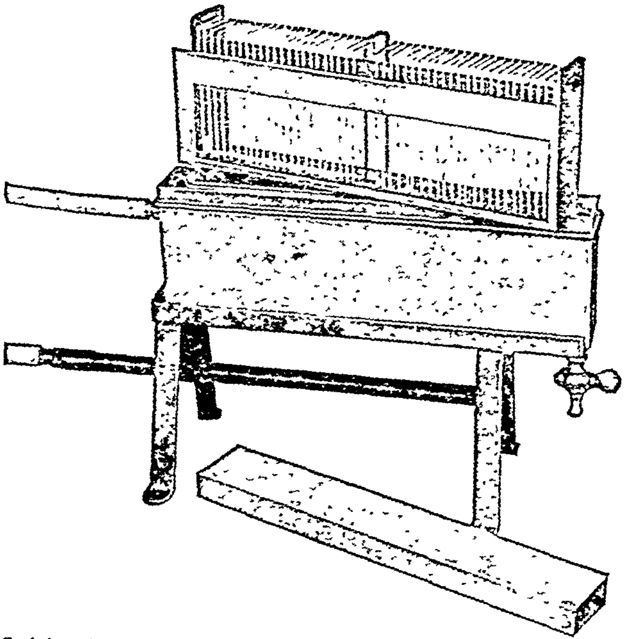
Clinical Notes, Suggestions, and New Instruments

A NEW STAINING DISH*

Roy R. Kracke, B.S., Emory University, Ga.

For several years I have been impressed with the need for a method of staining sections of tissue and bacteriologic smears in large quantities. This need is felt particularly in large laboratories where tissue sections are stained for class work, where serial sections are prepared as in departments of histology, pathology and embryology in medical schools, in the laboratories of tuberculosis sanatoriums, and in the larger public health laboratories where staining is carried on extensively.

Prompted by this need, I have designed the dish described here, believing that it will fulfil the need and demand for an article of this nature in that it modifies present staining methods to such an extent that rapid, efficient and economical staining can be carried out to a degree previously impossible with the older methods.



Staining dish for rapid staining of microscopic sections and smears in large quantities; water and gas attached; petcock is for release of stains; underneath is a row of microburners.

APPARATUS

The entire apparatus is constructed in three parts; the support, outside container, and slide rack. The stand is made of rigid black enameled iron with a row of ten microburners which supply an even and adequate *distribution* of heat to the stain within and is so arranged that the container can be moved forward or backward to facilitate drainage *from* the outlet petcock on the bottom.

The outer container and slide rack are both constructed of monel metal, which is noncorrosive and extremely durable, insuring long continued usage. The outer container consists of a metal rectangular box of outside dimensions of approximately 1½ by 3 by 10 inches and a capacity of 600 cc. when empty and 400 cc. when filled with slides. At one end near the top is an inlet to which a water hose can be connected, and at the opposite end on the bottom an outlet petcock through which the stain and water can be drained. The bore of the inlet and outlet is of sufficient caliber to insure a rapid inflow and a rapid outflow of stains or reagents, the dish emptying in about twenty seconds with the petcock open fully.

The slide holder fits snugly into the outer container, with sufficient space allowed so that it can be lifted and replaced easily, facilitating the thorough washing of slides by repeated immersion. It consists of a framework containing fifty slots for that number of slides and a bottom slide rest, the construction being such that the rack filled to its full capacity can be vigorously shaken to remove excess water or stain.

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* The staining dish is available at laboratory supply houses.
* From the Department of Bacteriology, Emory University School of Medicine.

TECHNIC FOR USE

The required number of specimens to be stained are placed within the rack and then placed into the outer container. The first stain to be used is then poured into the end space provided for that purpose, the stain flowing beneath the slides and welling up between them. Sufficient stain is poured in to cover the slides to the highest level of the smears, the upper portion of the slides remaining free from stain.

After the stain has acted for the required time, it is drained back into the stock bottle through the lower petcock. The other stains and reagents are poured in and drained off in a similar manner. Whenever water is indicated in the process, it is allowed to flow in through the upper petcock and drained off; or a continuous flow can be maintained when thorough washing is desired.

After completion of the staining process with tissue sections, they can be removed one by one and mounted; or, if suspected tuberculous sputum is being stained, the entire rack can be removed and the slides allowed to dry in the air. When staining tuberculous sputum, the same procedure is carried out, the necessary heat for steaming with carbolfuchsin being provided by the burners beneath.

ADVANTAGES

1. As many as fifty slides can be stained at a single procedure.
2. By pouring in stain from the stock bottle and draining off, a minimum quantity is used.
3. Stains can always be kept in stock bottles, with little evaporation and deterioration.
4. Only one staining dish is required, in contrast to the large number of containers in current use for a single staining process.
5. The dish is durable and has no breakable parts.
6. A consistently accurate degree of heat can be applied.
7. The slides are not touched after placing in the rack until completion of the staining process, obviating the necessity of transferring slides singly from one dish to another.
8. There is little or no spilling of stain on table tops and other objects.
9. Slides can be labeled before staining, the labels remaining intact and untouched by the stains or reagents.
10. The advent of an apparatus for staining, permitting a measured degree of heat being applied, opens a new field in staining microscopic objects that has hitherto been neglected because of a lack of apparatus facilitating such methods.

AN IMPROVED RECTAL DRESSING PAD AND BINDER[*]

J. F. Montague, M.D., New York

Though it will be granted that the ordinary T-binder is one of the traditions of rectal surgery, frequent employment of it invariably leads to the conclusion that it is not a particularly convenient or efficient device with which to hold in place dressings applied to the perineum. In hospital practice T-binders have to be especially made; and since no two nurses have ever yet made them alike, much lack of uniformity occurs as to proportions, pattern and other details. In private practice they are expensive and often unobtainable. When in use they require pins with which to be fastened, and the latter occasionally spring open and cause much acute distress to the patient. Then too, when the T-binder is fastened in place it not infrequently shows much propensity to shift, thus lessening its efficacy as a dressing binder. Finally, the tails of the binder soon become soiled, necessitating the discarding of the entire T-binder. This, of course, is a matter of inconvenience and considerable expense.

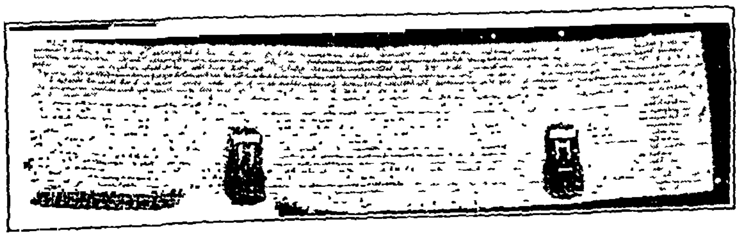
Fig. 1.—Belt of elastic cloth, with slip clasps.

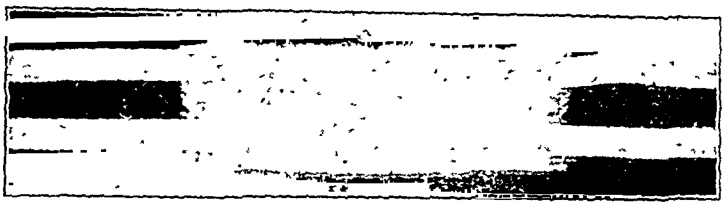
Fig. 2.—Pad of absorbent cotton, with tapes.

To obviate these deficiencies in the T-binder, I devised, and have used with a great deal of satisfaction, the binder described here.

An elastic belt on which are sewed four special slip clasps is the permanent part of the binder. Into the four clasps fit the gauze tapes from a special pad of absorbent cotton, the general form of which is admittedly similar to the familiar sanitary napkin. These pads are cheap, easily obtainable, and may be discarded as soon as soiled. By appropriate tension on the tapes, any degree of pressure desired may be exerted. Shifting is not possible, owing to the position of the four tapes and the manner in which they are fastened. When it is desired to remove the dressing or replace it, a slight slip of the clasp instantly releases the tapes and the pad.

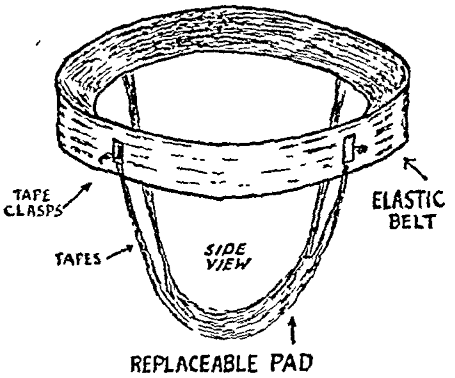

Fig. 3.—Rectal dressing pad and binder.

ADVANTAGES

1. No pins are required.
2. It is economical. Only the soiled pad need be discarded. The belt lasts indefinitely.
3. Shifting of the dressing is not possible.
4. It is quickly attached and quickly detached.

SUGGESTED USES

1. Following any rectal operation or following office treatment of rectal disease.
2. To protect the clothing in cases of draining abscess or fistula.
3. In cases of prolapse, to maintain pressure over the perineum.
4. In cases of colitis or following colon irrigations, to protect the clothing.
5. In scrotal or vulvar affections.
6. In cases of permanent incontinence due to sphincter injury, or in cases of temporary incontinence due to an overdose of liquid petrolatum.

I believe that this dressing pad and binder will be found eminently satisfactory in the instances mentioned. Johnson & Johnson of New Brunswick, N. J., have made the binders I have used to date.

540 Park Avenue.

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[*] From the Rectal Clinic, University and Bellevue Hospital Medical College.

DOUBLE PYOSALPINX IN A CHILD, AGED FIVE YEARS[*]

Garry R. Burke, M.D., San Juan, Porto Rico

A colored girl, aged 5 years, entered the hospital with her mother, Aug. 1, 1925, complaining of pain in the abdomen, vaginal discharge and fever. The mother stated that the patient had been well and playing until noon four days previously, when she complained of pain in the right side of the abdomen. At the same time she passed five roundworms, and the mother noticed a purulent vaginal discharge for the first time. The pain and the vaginal discharge continued, accompanied by feverishness and obstinate constipation. The mother gave a purgative the day before admission with no result, and an enema the morning of the day of admission, with results. The child did not vomit.

The patient had had measles two months before when seven brothers and sisters and the mother had it. She had been below par for one month at the time. The father was 38, and well; the mother, 36, and well. Eleven brothers and sisters, the youngest 18 months, were all alive and well. One had passed fifty roundworms with chenopodium recently.

On admission, the child was fairly well nourished, and appeared acutely and painfully ill; the temperature was 104 F.; pulse, 128; respiration, 30. She lay with both thighs flexed and with grunting but not labored or rapid respirations. The tongue had a grayish coat. The heart action was rapid (120) and regular. There were no murmurs. The abdomen was slightly distended, symmetrical, and rigid throughout to light palpation, but not completely to heavy continued palpation. There was marked tenderness throughout the abdomen. The liver was palpable at the costal margin. There was a whitish discharge from the vagina. A single sample of urine was amber, acid in reaction, with a specific gravity of 1.025, and negative to tests for albumin and sugar. Blood examination revealed: erythrocytes, 3,500,000; leukocytes, 18,000; hemoglobin, 60 per cent; a differential count revealed: polymorphonuclears, 83 per cent; small mononuclears, 14 per cent; large mononuclears, 2 per cent; transitionals, 1 per cent. In the feces were ova of *Tricocephalus trichiura*. A working diagnosis of ruptured appendix, with peritonitis, was made.

The patient was considered too ill to be operated on, and in the hope that the process would localize was given a rectal drip of tap water, in the modified Fowler's position.

August 6 to 12, the patient had improved slightly, although at times the abdomen would become rigid.

August 14, the vaginal discharge, which had almost disappeared, returned, and a slide, August 15, showed many extracellular and some intracellular gram-negative biscuit-shaped diplococci.

August 17, the vaginal discharge showed many pus cells and scattered intracellular and extracellular gram-negative diplococci.

August 18, pain and rigidity returned, and the temperature rose to 101.

August 19, the temperature was 98, the pulse, 90.

A lower median incision was made under ether anesthesia. The preoperative diagnosis was appendicitis with peritonitis and possibly salpingitis. The intestines were adherent to the parietal peritoneum and to one another. The appendix was in the midline of the abdomen posterior to the bladder; it was greatly inflamed and was adherent to the intestines but had not ruptured. The tip was adherent to the right lateral wall of the pelvis along with the fimbriated end of the right tube, which was thickened and inflamed. While the appendix was being freed, a small cavity in the tube end opened containing a small amount of a white, cheesy pus. The left tube was thickened and inflamed on the fimbriated end and was adherent to the lateral wall of the pelvis. When it was freed, 3 or 4 drops of whitish pus escaped into the culdesac. Enough adhesions were freed to allow appendectomy and double salpingectomy, but no attempt was made to explore the upper part of the abdomen. A rolled rubber tissue drain was put into the posterior culdesac, and the abdomen was closed with plain and chromic catgut—silkworm-gut in the skin and four retention sutures through skin and fascia. The postoperative condition was good.

The patient made an uneventful recovery and was discharged, September 8.

Microscopic examination of the appendix showed evidence of acute inflammation, especially marked in the serosa. There was a thickening of the oviduct wall, with a thickening of and gluing together of the villae and evidence of exudate in the lumen. The proliferation of the connective tissue and the endothelial cells was marked. There was a collection of leukocytes with polymorphonuclears predominating invading the entire tissue in overwhelming numbers. The diagnosis was: acute suppurative salpingitis; periappendicitis.

COMMENT

From the microscopic nature one would assume that the process was primary in the tubes and secondary in the appendix and peritoneum. We considered salpingitis in the preoperative diagnosis, but as the condition is so rare in children we thought appendicitis more likely. The midline incision was made with salpingitis in mind. The tenderness and rigidity were as much on the left as on the right. Richter[1] says: "Salpingitis is rare. At the Cook County Hospital I once saw an abdomen opened up for acute appendicitis in a 9 year old girl in whom there was an acute bilateral salpingitis. Examination of vaginal smears revealed gonococci." This statement was based on 208 cases of appendicitis reviewed by the author from Cook County, Wesley and Mount Sinai hospitals, Chicago.

A search of the titles in the literature disclosed four reported cases.[2]

DIABETES: INTENSIVE INSULIN AND OFFICE TREATMENT[*]

Horace Gray, M.D., Santa Barbara, Calif.

Fitz[1] is convinced that many patients are being sent into the hospital for insulin who could be treated just as efficiently and far more economically as outpatients. He has published an illuminating case report. Here is a similar but severer case, in which treatment was somewhat different and more drastic.

REPORT OF CASE

A chauffer, aged 19 years and 4 months, 169 cm. (66.4 inches) tall, began to be fonder of sweets, "a whole lot more than formerly," about Dec. 1, 1924. Two weeks thereafter the onset was rather rapid, with a boil on the neck, nocturia (four times each night), excessive thirst and ravenous appetite. About January 1, loss of strength and cramps in the right calf (possibly due to the greater use of the right leg in driving the automobile) were added to the other symptoms. The maximum weight when the patient was dressed, at the time I first saw him, was 124 pounds (56.2 Kg.), and was 116 pounds (52.6 Kg.) dressed when I next weighed him, about January 7.

Physical examination, Jan. 26, 1925, was negative. The initial urine, four hours after eating, contained 7 per cent sugar, but no diacetic acid. The patient absolutely refused to enter the hospital.

No blood sugar tests were done. At the first visit, he was given a bottle in which to collect the twenty-four hour urine, furnished Joslin's diabetic Manual to study, and sent to the hardware store to buy food scales.

At the second visit, the twenty-four hour amount was found to contain 194 Gm. of sugar. The patient was taught to use his food scales, to measure out a diet of carbohydrate, 34; protein, 15; fat, 30; calories, 466 (Joslin's test diet 3), yielding him about 10 calories per kilogram of body weight.

The next four visits, though spent in diet drill, did not make him sugar free. Insulin was begun by three small but increasing doses.

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[*] Read before the Porto Rico Medical Association, Dec. 20, 1925.

[1] Richter, in Abt's Pediatrics **3**: 568.

[2] Chaffey, W. C.: Pyosalpinx in a Child, Tr. Path. Soc. London **36**: 303, 1884-1885. Cheatie, A. H.: Case of Double Pyosalpinx in a *Child One Year and Nine Months Old*, Lancet **2**: 1098, 1891. Constensoux, G.: Péritonite tuberculeuse consécutive à une double salpingite chez une enfant d'un an, Bull. Soc. anat. de Paris **72**: 859, 1897. Johnson, H. L. E.: A Case of Pyosalpinx in a Young Girl, with Specimens and Remarks on Special Surgical Technic, J. A. M. A. **28**: 639 (April 3) 1897.

[*] From the Santa Barbara Clinic.

[1] Fitz, Reginald: Boston M. & S. J. **192**: 524 (March 19) 1925.

Intensive insulin office treatment was then instituted by having the patient come in after breakfast to spend the day, to have 10 units hourly until aglycosuric. Three such injections were necessary. During the intervals, he was taught in the office laboratory to do the Benedict test. No tremulousness resulted, but at 2 p. m. there were some faintness and hunger, which were relieved in ten minutes by black coffee, without food. Purely to guard against excessive insulin shock, for the patient now understood his management, he was then induced to go into the hospital. The next day, February 5, tremulousness was once sufficient to cause the use of 150 Gm. of orange juice. The second day in the hospital tremulouness was absent, but he was very hungry. The third day, February 7, he felt so well that he was discharged.

Data of a Diabetic Boy Made Sugar-Free in the Office

Day and Hour	Sugar		Diet				Weight Dressed, Pounds	Insulin Units
	Per Cent	Gm.	Carbohydrate	Protein	Fat	Calories		
Jan. 26, 1925	7.0	..	..	..	..	...	110	..
Jan. 27-28	5.8	194	..	..	..	...	112	..
Jan. 28-29	4.0	95	..	..	..	...	112	..
Jan. 29-30	3.5	92	..	..	..	...	111	1
Jan. 30-31	2.2	48	44	23	14	394	110	2
Feb. 2- 3	3.5	64	21	19	18	322	108	5
Feb. 4- 5								
8 a. m.	..	..	6	21	20	288	...	..
10 a. m.	1.7	5	..	..	..	...	...	10
11 a. m.	1.9	5	..	..	..	...	...	10
12:30 p. m.	1.5	3	..	..	..	...	...	10
2 p. m.	0.0	0	9	2	0	44	...	..
3 p. m.	0.0	0	..	..	..	...	...	..
4 p. m.	0.0	0	8	2	0	40	...	..
5 p. m.	...	..	13	16	12	200	...	..
From 4 p. m. to 7 a. m.		Lost						
Feb. 5- 6	...	0	84	25	40	796	107	30
Feb. 6- 7	...	0	64	32	64	960	...	12
Feb. 9-10	...	11	80	59	56	1080	114	15
Feb. 15-16	...	0	84	61	94	1426	114	20
June 22-23	...	0	Said to be same				125	16

Follow-up four months later revealed that he had kept sugar free, gained 11 pounds (5 Kg.), and had been working regularly.

1421 State Street

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

BERNARD FANTUS, M.D.
Associate Clinical Professor of Medicine, Rush Medical College
CHICAGO

(Continued from page 1983)

VESICAL MEDICATION

Irrigation of the urinary bladder is chiefly of use in cystitis excepting the acute form, in which on account of the distention it may aggravate the pain and distress. In such cases instillations performed as described in connection with instillations into the posterior urethra should be preferred.

For irrigation of the bladder, a soft rubber catheter is fitted by means of a glass pipet, with a 4 foot piece of rubber tubing and a glass funnel. The catheter is introduced into the bladder with all the precautions of asepsis, until the first drops of urine escape; pushing the catheter in farther produces unnecessary pain in sensitive bladders. After the urine has escaped, the tubing is pinched to prevent entrance of air, and the funnel filled with from 100 to 200 cc. of solution, the capacity of the bladder ranging from 175 to 250 cc. The funnel is then raised 2 or 3 feet above the level of the abdomen until the solution flows in. As soon as the patient complains of the distention, the flow is stopped and the solution permitted to remain in the bladder for a little while. It is then allowed to escape by lowering the funnel below the level of the bladder, and then emptying the fluid into a waste pail. This process is repeated two or three times, or until the return fluid indicates that the object aimed at has been attained. Care must be used not to inject any air, as its presence is believed to favor decomposition of urine within the bladder. Overdistention must also be avoided; and it seems that the patient's sensations are, in general, the best criterion of the amount that should be introduced. Some bladders cannot hold more than 10 cc. without distress. It should be remembered, in this connection, that more thorough cleansing is secured by frequent rinsing at one sitting with smaller quantities of fluid than by using larger quantities much less frequently. As long as the urine deposits thick, creamy sediment, irrigations should be repeated once daily; when in cystitis the urine is diffusely cloudy, an irrigation every two or three days generally suffices.

For mere cleansing, from 2 to 3 per cent boric acid solution may be employed. This is most conveniently kept on hand in saturated solution (1:30), and hot sterile water is added to secure the proper temperature (from 95 to 100 F.).

Superior perhaps to most other remedies in chronic cystitis is silver nitrate, from 1:10,000 to 1:1,000, the lower strengths being used first, gradually working up to the higher concentrations. It is most conveniently kept on hand in 10 per cent solution, from 0.1 to 1 cc. of which, added to 100 cc. of distilled water, will make a solution of the proper strength. Usually 500 cc. of fluid suffices for an irrigation. Warming of the solution is necessary only at first; later, room temperature may be employed. As silver nitrate irrigations are often painful, preliminary administration of an analgesic may be desirable for some patients. For very sensitive patients it is better to employ mercuric oxycyanide (1:5,000), which is a painless disinfectant solution; but this is usually by itself not sufficient to cure chronic cystitis. It is best kept on hand in 1 per cent solution, 2 cc. of which to 100 of ordinary water produces a solution of the required strength.

In vesical tuberculosis, silver nitrate irrigation is not well borne. Indeed, no form of local treatment will cure this condition until the primarily affected kidney has been extirpated. However, in preparation for cystoscopy, and after nephrectomy, as well as when nephrectomy is impossible, bladder irrigations are useful. One commences with from 30 to 50 cc. of mercuric chloride (1:10,000), and repeats the irrigations once or twice weekly, gradually raising the quantity to 50 cc., 80 cc. and the strength to 1:5,000. The treatment is painful, but usually secures some improvement. If these mercuric chloride irrigations are too painful, iodoform and guaiacol, each 5 per cent, in liquid petrolatum may be used as analgesic and antiseptic. Of this, 5 cc. may be instilled into the bladder daily.

VAGINAL MEDICATION

The vaginal mucous membrane is one of the less sensitive membranes of the body. Thus, for surgical disinfection, half strength tincture of iodine application, or irrigation with 2 per cent dilution of compound solution of cresol, are admissible. The vaginal mucosa is, however, quite capable of actively absorbing drugs and poisons, as has been shown by Macht.[69] A considerable number of cases of—frequently fatal—poisoning is on record from the insertion into the vagina of mercuric chloride tablets for the prevention of conception.

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* This is the twenty-seventh of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

The fact that the membrane lining the vagina is relatively insensitive, and the erroneous idea that it is invaded by micro-organisms, has led to the application to it of high and even corrosive concentrations of such agents as silver nitrate, alum, zinc sulphate and mercuric chloride. Such treatment is not only unsound theoretically, but positively detrimental. The so-called mucous membrane of the vagina is really a modified skin with a surface of stratified squamous epithelium and devoid of glands. For these reasons it is very resistant to micro-organismal invasion; and, excepting in infants, primary gonococcal vaginitis is very rare. When the normal protective mechanism has been injured by destructive agents that produce desquamation of the surface epithelium, it is much more liable to become involved. The gonococcus invades the urethra and its glands, Bartholin's glands, and the cervical canal with its many crypts and their alkaline secretion, and persists in these. True, the main symptom of some of these conditions is a profuse and persistent "vaginal discharge"; but the successful eradication of this leukorrhea requires correct topical treatment of the affected part. Chemical agents employed in vaginal douches do not reach these, though the hyperemia produced by prolonged douches at as high a temperature as can be borne (hot vaginal irrigation) may have a salutary effect on them.

The tolerance of the vagina to poisons such as quinine or cresol has resulted in the use of the former in the form of suppositories and of the latter as douches for the prevention of conception. Though there is no danger of poisoning of the woman from these measures, Clarence Cook Little points out a hitherto unthought of danger to possible offspring. Zoologists have shown that reproductive cells, such as the sperm, may be injured by physical and chemical agents so as to permit them to still retain their fertilizing power, though impairing their function to such an extent as to give rise to unhealthy and even monstrous offspring, or to individuals who, though otherwise apparently healthy, are deficient in fecundity and even sterile. As none of the chemical preconceptives are 100 per cent certain, the danger that fecundation may take place through a barely surviving spermatozoon, with the possibility of a lifetime of misery to the offspring, should be sufficient to condemn the use of these measures. The fact that apparently healthy children have at times been born in spite of the use of chemical preconceptives does not invalidate this assumption; for the period and the scope of the observations on the human being are much too limited to carry weight against the indisputable evidence readily produced by breeding generations on generations of rapidly proliferating lower organisms.

Vaginal Douches.—The most important vaginal therapeutic measure is the irrigation or douche. The best instrument for the purpose is a "fountain" syringe with a glass nozzle, 5 inches long, the bulbous extremity of which should have small openings at the side, but no opening at the end, for serious disturbance has followed the accidental introduction of douching fluid into the uterus. After use, the nozzle should be washed and kept immersed in a disinfectant solution, such as compound solution of cresol (a tablespoonful to a liter). After bleeding and whenever there are fresh, raw surfaces, as in puerperal cases, scrupulous attention to the details of aseptic technic is required, such as sterilizing the entire apparatus and washing the external genitals with soap and water, followed by 1:2,000 mercuric chloride solution, after the soap has been thoroughly rinsed off, for soap precipitates mercuric chloride. The use of antiseptic douching fluid is also advisable in such cases. These precautions are necessary not only to avoid infection but also to prevent contamination of the discharge and resulting offensive odor.

We must distinguish between (1) simple cleansing douches, (2) hot vaginal irrigation, and (3) medicated douches.

Simple Cleansing Douches: These are employed when there is an increase in vaginal discharge sufficient in amount to be troublesome, but without pain or evidence of inflammation or marked relaxation of the parts; and they are repeated as often as required to keep the parts clean. These douches are not advisable for mere cleanliness in healthy women, as here they are not only unnecessary, but may interfere with the normal germicidal action of the vaginal secretion, which is acid in reaction and serves as an excellent protection against the invasion of the upper genital tract by pathogenic organisms. The simple cleansing douche may be taken by the patient sitting over an ample receiving vessel. The bag filled with the injecting fluid is hung 3 or 4 feet above the level of the seat. The patient inserts the nozzle into the vagina and turns on the stopcock. While the irrigation proceeds, the nozzle should be moved from side to side, withdrawn and pushed up from time to time, so as to secure as thorough an irrigation of all the parts as is possible. More thorough, but likewise more inconvenient, is the douche when the patient is in the recumbent posture, preferably with the hips elevated, for in this position the vagina must become filled with fluid before any of it escapes. The weight of the fluid distends the canal and brings the injection in contract with every point of the surface. The patient can administer the douche in this position herself while lying in an empty bath tub.

Warm water (from 100 to 105 F.) may be employed without any addition, or preferably with a tablespoonful of sodium chloride to each liter of water. Mild acids might be added to the water used for irrigation, thereby imitating "nature's method." Thus, lactic acid (0.5 per cent) has been recommended as a vaginal douche; and it may be that it is not used as much as it deserves. The lactic acid, which is a thick, syrupy fluid, is probably best prescribed diluted with an equal quantity of water. One teaspoonful of this added to 0.5 liter of warm water yields an approximately 0.5 per cent solution. Boric acid is most commonly employed; and most conveniently by dropping a liberal excess (100 Gm.) of crystallized boric acid into a half gallon bottle, shaking it occasionally, and letting it stand. When wanted for a douche, as much of the solution as desired is poured off, and a little hot water is added to warm it. The bottle is then refilled with water. This can be repeated until all the boric acid has been used up, when some more is put into the bottle.

(To be continued)

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[69] Macht, D. I.: Absorption of Drugs and Poisons Through the Vagina, J. Pharmacol. & Exper. Therap. 10: 509 (Jan.) 1918.

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SATURDAY, JULY 3, 1926

SHOE DYES AND ANILINE POISONING

A survey of the medical literature, such as was reported a year ago in The Journal,[1] indicates that serious poisoning with the now widely used shoe dyes is by no means uncommon. The toxic ingredient is the solvent of the pigment and appears to have been nitrobenzene, other aniline derivatives, or even aniline itself. The first cases of intoxication in the United States with the latter as an ingredient of the dye were reported by the Wisconsin state toxicologist.[1] Muehlberger asserts that manufacturers prefer to use nitrobenzene as a solvent because of the fact that it costs only half as much as aniline. The extremely pungent and nauseating odor of nitrobenzene is offensive, and dyes containing it are objectionable to many persons for this reason. The shoe dyes containing aniline are relatively inoffensive in odor, and for this reason are even more insidious, though less toxic, than the preparations containing nitrobenzene. The public should be informed that the odorless dye is also quite toxic. This new menace from aniline, which has entered into larger toxicologic significance with the great development of American chemical industries since the World War, calls for accurate information with regard to the physiologic action of the substance. The current teaching, so far as it is at all explicit, assigns to aniline the rôle of a "blood poison" that brings about disintegration of erythrocytes and the formation of methemoglobin.

A careful study by Young, Muehlberger and Meek[2] of acute aniline poisoning is not in harmony with the explanation cited. They observed that when the chemical is administered, the respiration is slowed or stopped without any previous stimulation. They argue that if death from aniline were due to methemoglobinemia alone, the respiration at some dosage should be stimulated at first, as in any form of anoxemia. Death in such cases is usually cardiac in character. Electrocardiographic examinations demonstrate that aniline has a direct toxic effect on the heart muscle, including the specialized conductive tissue, and in proper dosage produces all types of arrhythmia and heart block. This is an important discovery.

Prompted by this recent information relative to the dangers of shoe dye poisoning, the department of health of Chicago has issued an order banishing all leather dyes containing toxic solvents from sale within the city after March 1, 1927, and demanding the presence on all such dyes of a warning label. This must say that shoes that have been dyed should stand in the open for not less than seventy-two hours after drying before being worn, in order to avoid poisonous effects to the wearer, and also that such dyes must not be used on canvas, satin or other shoes manufactured from fabrics. The department of health is also preparing for posting in every shoe store, shoe repair shop and shoe-shine parlor a placard containing a similar warning. The care of the public health in our times demands constant alertness in applying the discoveries of the laboratory to practical preventive measures.

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[1] Muehlberger, C. W.: Shoe Dye Poisoning, J. A. M. A. **84**: 1987 (June 27) 1925.

[2] Young, A. G.; Muehlberger, C. W., and Meek, W. J.: Toxicological Studies of Acute Aniline Poisoning, I, Experimental Studies of Acute Aniline Poisoning, J. Pharmacol. & Exper. Therap. **27**: 101 (March) 1926.

HYPOGLYCEMIA AND RECURRENT VOMITING

The numerous elaborate studies of the sugar content of the blood that have been made since the discovery of insulin and its physiologic action have indicated that hypoglycemia is a symptom which may in some respects rival its opposite, hyperglycemia, as a manifestation of bodily disorder. How serious this may be is apparent from a description that has been furnished by Macleod.[1] When the blood sugar reaches about 0.075 per cent, it is noted, the patient experiences extreme hunger and a sense of fatigue. He usually becomes anxious and may lose his emotional control. Actual tremor of the musculature is rarely seen, but there is a definite sense of tremulousness and some incoordination for fine movements. According to Banting, Campbell and Fletcher,[2] vasomotor phenomena are common; pallor or flushing, sometimes one after the other; a sense of heat, of chilliness, almost always a profuse sweat. At lower levels of blood sugar, acute mental distress, mental disturbances, delirium and finally coma, with loss of the deep reflexes, supervene.

Not a little effort is being directed to the correlation of untoward manifestations with the state of carbohydrate storage and mobilization. Josephs[3] of the department of pediatrics at Johns Hopkins University has noted that in children some, and in all probability a large, proportion of the attacks of recurrent vomiting are characterized by hypoglycemia, which develops rapidly and in some instances may reach a considerable degree. Josephs points out that one cannot insist with certainty that a lowered sugar content in the blood is the cause of recurrent vomiting in general. He believes, however, that it is coincident with a considerable number of attacks, and children who give clinical histories of recurrent vomiting in certainly a large number of instances have some peculiarity of carbohydrate metabolism, as the result of which their blood sugar falls more rapidly than normal at the outset of a fast. That such hypoglycemia is responsible for some of the symptoms, such as drowsiness, acetone body excretion and, in severe cases, convulsions, seems to Josephs to be undoubted; that it is responsible for the vomiting is by no means proved.

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[1] Macleod, J. J. R.: Insulin, Physiol. Rev. **4**: 21 (Jan.) 1924.

[2] Banting, F. G.; Campbell, W. R., and Fletcher, A. A.: Brit. M. J. **1**: 8 (Jan. 6) 1923.

[3] Josephs, Hugh: Recurrent Vomiting, Am. J. Dis. Child. **31**: 657 (May) 1926.

Considerations of this sort are especially interesting to those clinicians who have followed the successive hypotheses which, during the last few decades, have made claims for recognition as explanations of recurrent vomiting. Among them one finds such familiar items as uric acid diathesis, autointoxication, gastric neurosis, hysteria, chronic appendicitis, postural defect and eyestrain. Without denying the uncertainty that at present attaches to the hypoglycemic factor, it must at any rate be regarded as a sign that can be determined with precision instead of uncertainty. Furthermore, there are admittedly conditions that could readily initiate hypoglycemia in childhood. Fasting, fever and other bodily states that may make undue demands on the carbohydrate reserves are not uncommon to this early period of life. Whether there are specially predisposed persons in whom the outcome is more severe is not yet ascertained. At any rate, hypoglycemia is a symptom that suggests a definite principle of treatment—and this is no small advantage.

FILLING THE PHYSICIAN'S PRESCRIPTION

A generation or more ago it was not uncommon to find a fairly well equipped pharmacy as an adjunct to the physician's consultation room. The doctor then dispensed the drugs required by his patients, whereas the modern practitioner confines himself largely to diagnoses and prescriptions, leaving the compounding of medicines to the neighborhood druggist. Such drugs as are dispensed by the physician himself are for the most part in the form of standardized powders, pills or tablets, which he obtains from pharmaceutic houses that specialize in the preparation of assayed drugs and standardized mixtures. The druggist also, to an increasing extent, procures his medicinal preparations from the same source, so that, theoretically at least, the medicaments that finally reach the patient should be of more nearly standard strength and more uniform quality than was formerly the case.

However great the improvement has been in this respect, the need for official vigilance is still apparent from the reports of various state and federal inspection laboratories. The latest report of the Connecticut Agricultural Experiment Station[1] notes that, of about 300 samples of drugs examined, nearly 30 per cent were substandard or otherwise illegal. An interesting departure from the usual program of inspection is represented by the study of the strength and quality of medicaments obtained on physician's prescriptions. Three simple prescriptions were chosen which called for medicines that permitted accurate assays by approved methods. In the case of a prescription calling for a solution of potassium iodide of definite strength, twenty-seven of fifty-seven samples examined were within 5 per cent of the strength demanded; fifteen were within 10 per cent of that strength, and fourteen varied from the required strength by more than 10 per cent. Of the last named group, the greatest variation was a preparation that was only one fifth of the strength called for. The report observes that on the basis of a liberal tolerance only about 75 per cent of the samples obtained on this prescription can be regarded as satisfactory or passably so.

Again, in the instance of a prescription calling for a solution of arsenous acid of the strength stated in the United States Pharmacopeia, two of twenty-two samples examined were not the article demanded but another preparation of like arsenic content (Fowler's solution); nine varied from the required strength by more than 10 per cent, and ten samples were within 10 per cent of the strength demanded. Thus, only about half of the total number can be regarded as satisfactory. The extremes in this case are represented by one preparation containing only one fiftieth of the amount of arsenic required, and another that contained twice the amount prescribed. The third prescription called for aromatic spirit of ammonia of pharmacopeial standard. Of forty-three samples examined, twenty-five were less than 90 per cent of the required ammoniacal strength.

Examinations of this kind reflect, of course, both the quality of drugs used and the accuracy of compounding them; but the physician and the patient are concerned only with the article as dispensed and not with the probable source of any inaccuracy that may occur. Whether undesirable therapeutic effects would be likely to result from the variations observed may well be doubted in most cases; this is not the import of the inspection. Nevertheless, the single instance of a double dosage of a potent drug is not a matter of small concern. The data presented are limited, and the report properly refrains from any general charges of inefficiency on the part of pharmacists in the compounding of medicines. The facts presented, however, suggest that officials charged with the examination of candidates for admission to the practice of pharmacy should strongly emphasize that the compounding of drugs is a serious business, and those engaging in such practice should be qualified not only as to their knowledge of drugs but also as to their skill in laboratory technic.

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[1] Bailey, E. M.: Food and Drug Report for 1925, Bull. 276, Connecticut Agr. Expt. Sta., March, 1926.

Current Comment

ZINC STEARATE INHALATION

A manuscript recently sent to The Journal gave the experience of a physician called to treat a child who had inhaled quantities of zinc stearate. The physician reported that he had secured a successful result by the administration of ether inhalations, based on the chemical reasoning that ether is a solvent of fatty acid, which is a component of zinc stearate. Before publishing the statement, and in view of the serious nature of zinc stearate asphyxia following accidental aspiration of the powder, it was thought desirable to make certain fundamental investigations. These were undertaken by Dr. Hugh McGuigan of the department of pharmacology and therapeutics of the University of Illinois, at the request of the Committee on Zinc Stearate. Experiments were made with rats, rabbits and dogs, and in no instance was the inhalation of ether successful in relieving the victims after a sufficient amount of zinc stearate had been inhaled to cause marked respiratory embarrassment. Dr. McGuigan concludes that etherization does no harm and that in some instances it may result in relieving irritation caused by the powder. He is, however, convinced that, as far as the animal experiments show, it must be considered wholly as symptomatic treatment, and no more applicable to the treatment of asphyxia from zinc stearate than to that from other causes.

BOOK-LEGGING

The surreptitious selling of books forbidden circulation by law has achieved in the book trade the somewhat opprobrious name of book-legging. Such selling is hardly likely to affect the physician, since there are few, if any, books forbidden to the medical profession. Another method of selling books has, however, just come to light which is distinctly of medical interest and about which it seems desirable to warn readers of The Journal. A New York publisher has offered for sale by advertisements and through circulars a book by G. A. Sutherland, entitled "Diet and Dietetics." The volume in question was originally published by the Oxford Press in 1908, and had not recently been offered for sale by that publisher. In January, a physician in Ann Arbor, Mich., received a copy of the book from an American publisher, without having ordered it. A few days later a bill was received, which the physician naturally refused to pay. He informed the concern of his unwillingness to keep the book, and was told in reply that he might return it by mail, and if he did not care to do so, that the express company would call for it. In the meantime, the physician inquired of Dr. Sutherland himself concerning his relationship to the issuing of this volume. Dr. Sutherland replied that the book had not been reedited since 1908, and that it was his impression that the American publisher had secured some old copies and inserted a new title page with the date 1925. The value of a book on dietetics issued in 1908, before our present knowledge of vitamins and other food factors, is certainly not great. In view of such selling methods, physicians will do well to inform themselves as to the dates of writing of volumes concerning which they have no exact information. It will be the policy of the advertising pages of The Journal to refuse advertising space to reissues of such works without a clear statement as to the date on which the books were first published.

ENDEMIC GOITER AND INTELLIGENCE

Sufficient evidence is now at hand to leave no doubt of the widespread incidence of mild adolescent goiter in different parts of this country. While the prevailing conditions are not to be regarded as extremely serious, the fact must be faced that thyroid disturbances of even the milder sorts may be forerunners of more objectionable disturbances. Fortunately, means of easy prophylaxis are now at hand and being instituted in many quarters of the world. There is greater enthusiasm than ever before for child welfare work in every detail of the life of the adolescent boy and girl. According to the statement of a government expert,[1] as the result of the interest arising out of the so-called thyroid surveys there is now a fairly wide impression that simple goiter produces mental subnormality and retardation. This serves to justify the recently completed study of the effect of endemic goiter on the intelligence of school children. The observations, made in the Cincinnati public schools, were concerned primarily with the determination of whether any relationship exists between the size of the thyroid and what has been variously designated as intelligence, brightness or mental alertness. They do not touch on the relationship of such mental conditions as nervousness, emotional disturbance, psychopathic trends or disturbances of personality. The locality selected was favorable in that among nearly four thousand school children in the sixth grade some degree of thyroid enlargement was found in 25.2 per cent of the white boys and 39.6 per cent of the white girls included in the survey. Analysis of chronological age data, indicative of school retardation or advancement, failed to reveal significant variations between thyroid-normal and thyroid-enlarged children. A comparison of the percental ranks of the thyroid normal and the thyroid enlarged failed to show differences of sufficient magnitude to warrant the conclusion that the thyroid normal have a keener mentality than the thyroid enlarged. Children with marked thyroid enlargements were apparently slightly less intelligent on the average than those with normal or slightly enlarged thyroids. However, the number of children with marked thyroid involvement was relatively small, suggesting the desirability of further observations on children with marked thyroid enlargements before drawing conclusions concerning the influence of thyroid size on intelligence. Olesen and Fernald admit that before hard and fast conclusions concerning this interesting subject can be drawn, it is manifestly desirable that similar investigations be undertaken in other parts of the country on a more extensive scale and possibly with different methods. Moreover, such studies might well be conducted in regions of considerable goiter endemicity.

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[1] Olesen, Robert; and Fernald, M. R.: Endemic Goiter and Intelligence, Pub. Health Rep. **41**: 971 (May 21) 1926.

GERMICIDAL PROPERTIES OF SOAPS

The assertion that solutions of soap may exert germicidal effects is credited to Koch.[1] His conclusions have by no means received universal acceptance. A statement of the more customary view of the present time makes the value of soap in disease prevention rest on its cleansing powers and not on its disinfecting properties. According to this conception, soap removes germs mechanically; it does not kill them. The attempts made to fortify the germicidal power of soap by the addition of antiseptic substances have not met widespread favor; with possible exceptions, so-called medicated or disinfecting soaps are regarded as having little or no special value in fighting bacterial contaminations. Lately, however, Walker[2] of the Army and Navy General Hospital at Hot Springs, Ark., has demonstrated that the adverse opinions do not deserve universal application. Thus, soaps are not to be relegated solely to an indirect function. Although they are not to be regarded as general germicides, nevertheless they are destructive to many varieties of microorganisms. For example, according to Walker the thorough washing of the hands with the formation of a good lather will destroy any adhering diphtheria bacilli, streptococci and pneumococci. Any ordinary soap will serve for this purpose. There are microorganisms that seem to be unaffected by the soaps of some of the fatty acids, varying degrees of resistance to the destructive action of soaps being observed. Foreign substances interfere markedly with their germicidal action, so that it would be futile to attempt to disinfect sputum or feces with solutions of soaps. It has been found[2] that the susceptibility of meningococci and gonococci is such that they, too, will readily be killed by any ordinary soap used with a reasonable degree of care. Perhaps we have undervalued some of the virtues of soap in the process of cleansing that the human body, and particularly the hands, often demand.

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1. Koch, Robert: Mitt. a. d. k. Gsndhtsamt. **1**: 271, 1881.
2. Walker, J. E.: The Germicidal Properties of Chemically Pure Soaps. J. Infect. Dis. **35**: 557 (Dec.) 1924; The Germicidal Properties of Soap. ibid. **37**: 181 (Aug.) 1925; **38**: 127 (Feb.) 1926.

"Education and the Good Life."—Ignorant adults are unteachable: on such matters as hygiene or diet, for example, they are totally incapable of believing what science has to say. The more a man has learnt, the easier it is for him to learn still more—always assuming that he has not been taught in a spirit of dogmatism. Ignorant people have never been compelled to change their mental habits, and have stiffened into an unchangeable attitude. It is not only that they are credulous where they should be skeptical; it is just as much that they are incredulous where they should be receptive.—Bertrand Russell.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Personal.—Dr. Marion Stark Craig has been reelected city health officer of Batesville.——Mrs. Dewell Gann, Benton, has been elected president of the Women's Auxiliary of the state medical association for the ensuing year, and Mrs. Charles T. Drennen, Hot Springs National Park, president-elect.——Dr. Harry E. Williams, Jr., Pine Bluff, won the state championship in the trapshooting tournament by a score of 196 out of 200.——Dr. Darmon A. Rhinehart, Little Rock, addressed the Crawford County Medical Society, May 27, on "Roentgen-Ray Diagnosis of Gallbladder Disease."

CALIFORNIA

Illegal Practitioners.—The following are abstracts of items received recently from the California State Board of Medical Examiners: W. H. Lockman, Los Angeles, whose license to practice medicine in California was revoked, Feb. 16, 1921, was recently charged with performing an illegal operation in a complaint filed by Deputy District Attorney McIsaac.——Charles E. Marsh, naturopath, San Diego, whose license was revoked, Feb. 12, 1925, was recently indicted by the county grand jury in connection with the death of Mrs. Louise Giovanazzi following an illegal operation.——Robert J. McAdory, M.D., formerly of Visalia, recently pleaded guilty to violation of the narcotic law, and was sentenced to ninety days in jail; the sentence was said to have been suspended and Dr. McAdory was committed to the state asylum at Patton.——J. Lafayette Berry, M.D., Pasadena, whose license to practice medicine in California was revoked in 1919, was recently charged with practicing without a license, the complaining witness stating that she paid Berry $200 for removing an alleged cancer from her face.——Sally Broy, an alleged voodoo doctor of Oakland, was recently charged with practicing medicine without a license; she is said to have made diagnoses by gazing through the thorax by means of a red lantern and muttering weird incantations.——H. H. Heddens, Bakersfield, who is said to have been charged recently with violation of the medical practice act, claimed to have been licensed to practice in New York; the California State Board of Medical Examiners through correspondence has been unable to verify his claim.——Mrs. Christiana Loose recently pleaded guilty to violation of the medical practice act in Oakland and was fined $50; Mrs. Loose was recently acquitted of manslaughter, it is reported, after an operation on Mrs. Charlotte J. Sweet.——Rolley Jamieson, Los Angeles, who was recently charged with violation of the medical practice act, is said to have insisted that a patient disrobe for a physical examination as a part of his treatment; the sign on Jamieson's door read "R. M. Jamieson, President, I. S. S. A., Incorporated, Analytical Psychologist."——W. P. Seibert, who holds a diploma from the notorious and defunct Oriental University, Washington, D. C., recently pleaded guilty in Los Angeles to a charge of violating the medical practice act, and was sentenced to sixty days in jail; Seibert is said to have graduated also from the Los Angeles College of Chiropractic; his sentence was suspended for a period of two years.——Culver R. Spencer, Los Angeles, was recently sentenced to sixty days in jail following a plea of guilty to violation of the medical practice act; the sentence was, however, suspended for a period of two years. Spencer is said to have practiced electrotherapy, hydrotherapy and magnetic treatment in Denver for eight years without any license, coming to California about two years ago; a sign outside his residence reads "Thermo-Magnetic Therapic Treatment."

GEORGIA

State Medical Election.—At the annual meeting of the Medical Association of Georgia, Albany, May 14, Dr. Virgil O. Harvard, Arabi, was elected president; Drs. James A. Redfearn, Albany, and Benjamin H. Minchew, Waycross, vice presidents, and Dr. Allen H. Bunce, Atlanta, secretary. The next annual meeting will be at Athens.

Society News.—Drs. Edward S. Cowles and Burr Ferguson addressed the Fulton County Medical Society, Atlanta, June 2, on "Psychopathology with Special Reference to Medicine" and "Control of White Blood Cells", respectively.——Dr. Frank K. Boland addressed the Fulton County Medical Society, Atlanta, June 17, on "Surgery of the Biliary System"; Dr. William W. Anderson addressed the June 3 meeting on "Pyuria in Infants and Children."——The twenty-sixth annual meeting of the Chattahoochee Valley Medical and Surgical Association will be held at Warm Springs, Ga., July 13-14. The program shows that a large number of papers will be presented, each limited to fifteen minutes, and that among them will be: "Surgical Aspects of Gynecology," Dr. Gilbert F. Douglas, Birmingham, Ala.; "Purpura Hemorrhagica," Dr. Otis D. Gilliam, Columbus, Ga.; "Present Status of Cesarean Section," Dr. Charles H. Richardson, Jr., Macon, Ga.; "Neurology in Private Practice," Dr. Daniel M. Adams, Panama City, Fla., and "Myocardial Insufficiency," Dr. Lisle B. Robinson, Atlanta.

ILLINOIS

Society News.—At the annual basket picnic of the Greene County Medical Society at Coonrod Park, Greenfield, June 11, Dr. John R. Merriman, Springfield, gave an address on "Cause and Treatment of Diabetes."

Hospital News.—A drive has been started to raise $75,000 for a community hospital in Libertyville.——The new 300-bed hospital building for St. Mary's Hospital, East St. Louis, was expected to be ready for occupancy, July 1.

Personal.—Dr. Robert H. Jacobs, after eleven years on the staff of the Illinois Soldiers' and Sailors' Home, Quincy, and two years at the Jacksonville State Hospital, has left the state service to engage in general practice at Metropolis.——Dr. Arthur M. Aszmann, East St. Louis, has been elected a director of the Illinois Trapshoot Association.

Chicago

Dr. Webster Honored.—Dr. J. Clarence Webster, Shediac N. B., formerly professor and head of the department of obstetrics and gynecology at Rush Medical College, received the honorary degree of doctor of laws at the recent commencement exercises of Dalhousie University, in recognition, the *Canadian Medical Association Journal* says, of his work in forwarding the interests of education and of his research in the history of the maritime provinces. Dr. Webster was invited to deliver the principal address at the commencement exercises.

Society News.—Dr. Mabel M. Matthies has been elected president of the Chicago Women's Medical Club; Dr. Gertrude F. Thompson and Dr. Anny M. Saunders, vice presidents; Dr. Minnie Jahp, secretary; Dr. Goldye L. Hoffman, treasurer, and Dr. Sadie B. Adair, editor.——The quota for the summer clinics of the Chicago Medical Society at the Cook County Hospital has already been filled.——The old building at the southeast corner of Wabash and Lake is now being torn down to make way for the new medical and dental arts building, which will be ready for occupancy, May 1, 1927.

Personal.—Dr. Casey A. Wood has spent a year in Ceylon collecting material on comparative vision in birds and has now gone to Kashmir to continue this study for six months, when he will return to Chicago by way of China and the Philippine Islands; Dr. Wood has been made honorary collaborator in the Division of Birds, Smithsonian Institution, Washington, D. C., for his contributions to ornithology.——Dr. Irving F. Stein conducted a gynecologic diagnostic clinic before the alumni of the Detroit College of Medicine and Surgery, at Detroit, June 18.——Edwin O. Jordon, Ph.D., professor of bacteriology, University of Chicago, delivered a public lecture in the Harper Assembly Room, June 30, on "Conquest of Disease."——Dr. Franklin H. Martin received the honorary degree of doctor of public health at the recent graduating exercises of Detroit College of Medicine and Surgery, Detroit.

IOWA

Personal.—Dr. Clark C. Griffin, Vinton, who recently celebrated his eightieth birthday, has practiced medicine in that community for fifty-eight years.——Dr. William Jepson, Sioux City, has been appointed a member of the state board of medical examiners, effective, July 1.——Dr. and Mrs. John R. Coxe, North English, celebrated their golden wedding anniversary about the middle of June. Dr. Coxe has practiced medicine in North English for about thirty years.

Society News.—Dr. Merrill M. Myers was elected president at the annual luncheon of the Iowa Heart Association, Des Moines, May 14, and Dr. Fred M. Smith, Iowa City, vice president.——Dr. Joseph C. Bloodgood, Baltimore, addressed the annual meeting of the Dubuque County Medical Society, June 4, on "Cancer Diagnosis and Prevention," illustrated with lantern slides and specimens; Dr. Bloodgood gave a clinic in the morning on cancer and precancerous lesions, and in the evening a public lecture; Dr. Verne C. Graber, Iowa City, addressed the society on "Cardiac Decompensation" with especial reference to prevention.

LOUISIANA

Tax on Kerosene for Health Work.—The House of Representatives voted, June 16, to place a tax of 1 per cent a gallon on kerosene for domestic use to raise funds to assist in establishing tuberculosis sanatoriums in the parishes, and to indemnify dairymen for the slaughter of tuberculous cattle. The bill also provides that the state board of health provide full-time health officers and pay at least 20 per cent of their salary, and authorize the state board to assist any parish or group of parishes in establishing and maintaining tuberculosis sanatoriums for residents of the state.

State Society Kills Chiropractic Bills.—A large delegation of physicians from all parts of the state, representing the state medical society, the Orleans Parish Medical Society, the state board of medical examiners, Tulane University Medical School and other organizations, appeared before the senate committee on public health and quarantine June 1, and succeeded in defeating the chiropractic bill, the senate committee voting seven to one against the bill. Among those who addressed the committee were Dr. Stephen M. Blackshear, president, Louisiana State Medical Society; Dr. Leon J. Menville, chairman of the house of delegates; Dr. Benjamin A. Ledbetter, chairman, committee on public policy and legislation; Dr. Charles Cassedy Bass, dean, professor of experimental medicine and director of the laboratories of clinical medicine, Tulane University Medical School, and Dr. Paul A. McIlhenny, professor of clinical orthopedics and surgical diseases of children. Subsequently this bill was introduced in the house of representatives, and the chiropractors staged another rally before the house committee. The medical profession was solidly arrayed against the bill. The arguments before the committee lasted until after midnight; among those at this hearing in addition to physicians already mentioned were: Dr. Roy B. Harrison, secretary of the state board of medical examiners; Dr. Thomas E. Wright of the legislative committee; Dr. Joseph A. Danna; Dr. Edmund L. Leckert; Dr. William H. Seemann, state bacteriologist, and Drs. Marvin Cappel, Charles F. Gelbke, and Carl A. Weiss.

MISSOURI

Diploma Mill Ousted.—The supreme court of Missouri handed down a decision, June 23, in which the charter of the Kansas City College of Medicine and Surgery was ordered revoked and forfeited. The court held, it is reported, that the school misused its charter powers, franchises and privileges. Justice White said in the decision, "We can imagine no more serious injury to the public than the issuance of degrees to practice medicine to men wholly unqualified to treat the sick." The Kansas City College of Medicine and Surgery received its full share of unsavory publicity during the recent diploma mill scandal, which was well aired by the investigation in Connecticut. Dr. Date U. Alexander is secretary of the school.

Society News.—Dr. J. H. Eugene Rosamond, Memphis, addressed the Pemiscot County Medical Society, Caruthersville, on "Three Months Colic"; the society voted, unanimously, to raise its dues to $12.——The St. Louis Medical Society, St. Louis, recently adopted a resolution stating that it believes that the Reserve Officers' Training Corps in schools and colleges is of great value to the students and the government, and that it is particularly proud of the two corps in St. Louis.——The second annual banquet of the Ensworth-Central Medical College Alumni will be held, October 31, at the Hotel President, Kansas City, during the fall clinic week; Dr. Charles W. Fassett, 115 East Thirty-First Street, Kansas City, is the secretary.——Dr. Joseph W. Kimberlin has been elected president of the Kansas City Eye, Ear, Nose and Throat Society for the ensuing year, and Dr. Ambrose E. Eubank, secretary.

NEBRASKA

State Medical Election.—At the fifty-eighth annual meeting of the Nebraska State Medical Association, Omaha, May 11-13, Dr. Harry E. Potter, Fairbury, was elected president, and Drs. Roy D. Bryson, Calloway, Claude P. Fordyce, Falls City, and Isaiah Lukens, Tekamah, vice presidents. The next annual meeting will be at Lincoln.

NEW YORK

Personal.—Dr. Francis Park Lewis, Buffalo, has been elected first vice president of the National Committee for the Prevention of Blindness.——Dr. Arthur J. Bedell, Albany, has been elected president of the Alumni Association of Albany Medical College.

University News.—Graduates of Loyola University School of Medicine and Bennett Medical College are forming a New York State Alumnus Club; graduates of these schools are requested to send their name, address, and year of graduation to Dr. Louis J. Radest, 180 Thatford Avenue, Brooklyn.

New York City

Bequest to Urologic Clinic.—The will of Louis Sherry, filed, June 18, bequeathed about $700,000, of which $500,000 will be immediately available, to the J. Bentley Squier Urological Clinic at the Columbia-Presbyterian Medical Center. This will bring the sum available for the clinic, it is reported, to about $1,300,000. The clinic will occupy the eighth floor of the new Presbyterian Hospital building, and was originally intended to accommodate sixty-four patients. Mr. Sherry's will directs that his bequest should be used to provide beds, room and other accommodations for persons suffering from cancer, and in maintaining such patients according to the best judgment of the officers in charge of the hospital.

Graduation at Cornell.—Dr. Livingston Farrand, president of Cornell University, conferred the degree of doctor of medicine on sixty-three graduates, June 10; Dr. Frank S. Meara, professor of clinical medicine at Cornell University Medical College, gave the graduation address; the John Metcalf Memorial prize for excellence in scholarship was awarded to Miss Janet G. Travell, the daughter of Dr. John Willard Travell, New York; various other prizes were awarded for excellence in departments, including a prize, it is reported, from the surgeon general, U. S. Army, to the student attaining the highest military standing in the Reserve Officers' Training Corps; twenty members of the graduating class were commissioned as first lieutenants in the medical reserve corps.

Hospital News.—The New York *Times*, which conducts annual health examinations of members of its staff of three years' standing, will soon reequip its hospital department and clinical laboratory for employees in the Times Building.——A fund of $111,078, representing subscriptions and interest to establish a memorial in the new Presbyterian Hospital to Seymour L. Cromwell, a former president of the New York stock exchange, was turned over to the hospital, June 9; it will provide a ward of twelve beds, two of which will be set aside for the employees of the stock exchange and its affiliated companies.——The committee of the whole of the board of estimate has provided the expenditure of about $15,750,000 in the next two years to improve the city hospitals; of the more than $8,500,000 provided for expenditure this year, there is already available more than $6,000,000 which had been authorized previously. The institutions benefited include (1) Bellevue and Allied Hospitals; (2) those under the control of the department of health, and (3) those under the jurisdiction of the department of public welfare.——Dr. Arthur A. Landsman has been elected president of the medical board of the Jewish Memorial Hospital for the ensuing year, and Dr. Louis Neuwelt, secretary.——Dr. Adolph Rostenberg has been appointed attending dermatologist to the new Sydenham Hospital.——The new Bronx Hospital, Fulton Avenue and One Hundred and Sixty-Ninth Street, has broken ground for a 400 bed hospital.——Caledonian Hospital, Brooklyn, dedicated its new building, June 12.——Flushing Hospital, Flushing, is conducting a campaign for $1,000,000 to build an annex which will have eighty-one beds.——The French government officially recognized the service of the French Hospital, June 17, when decorations were conferred on a number of physicians connected with that institution.

NORTH CAROLINA

State Medical Election.—At the annual meeting of the Medical Society of the State of North Carolina, Wrightsville Beach, June 14-17, Dr. John Q. Myers, Charlotte, was elected president; Drs. John W. Carroll, Wallace, Aaron Y. Linville, Winston-Salem, and Charles H. Coke, Asheville, vice presidents, and Dr. Lewis B. McBrayer, Southern Pines, secretary-treasurer. The next annual meeting will be at Durham, April 18-21, 1927.

New State Health Officer.—At a special session of the state board of health, June 21, Dr. Charles O. Laughinghouse, Greenville, was elected secretary-treasurer of the board. Dr. George M. Cooper, who has been the acting secretary and treasurer of the board since the resignation of Dr. Watson S. Rankin about a year ago, will continue in that capacity until October 1, when the new appointment becomes effective. Dr. Rankin was elected a member of the state board of health to succeed Dr. Laughinghouse.

Traveling Postgraduate Lecturers.—The annual University of North Carolina postgraduate extension course for physicians began June 21 with a good attendance; the lecturers will be Drs. Howard Sprague, Boston; Dwight O'Hara, Boston University School of Medicine, and Edward S. Emery, Jr., associate in medicine, Peter Bent Brigham Hospital, Boston, each of whom will deliver four lectures at each place on the circuit: Mecklenburg, Guilford, Rowan, Gaston and other nearby counties.

Dean Kitchin Withdraws Resignation.—Dr. Thurman D. Kitchin, who recently tendered his resignation as dean of the Wake Forest Medical College, has withdrawn his resignation at the request of the board of trustees and will remain at the school as dean. The conditions which led to Dr. Kitchin's resignation have been removed, and he has been given full control of that department of the college. The board of trustees has accepted the resignation, it is reported, of Dr. Fountain W. Carroll and Walter F. Taylor, M.A., of the medical faculty.

New State Board of Examiners.—The state medical society at the recent annual meeting at Wrightsville Beach elected the following physicians to compose the state board of medical examiners for a term of six years:

Dr. Foy Roberson, Greensboro.
Dr. Paul H. Ringer, Asheville.
Dr. John K. Pepper, Winston-Salem.
Dr. William Houston Moore, Wilmington.
Dr. John W. MacConnell, Davidson.
Dr. Thomas W. M. Long, Roanoke Rapids.
Dr. Walter W. Dawson, Grifton.

In the history of the board, as far back as 1859, no member has ever been reelected or ever been a candidate for reelection. Dr. Walter W. Dawson, Grifton, has been elected president of the new board, and Dr. John W. MacConnell, Davidson, secretary-treasurer.

Our correspondent writes that strenuous efforts are being made to induce the state board to restore the licenses of physicians that were revoked following convictions in the federal court for violation of the Harrison Narcotic Act; it is not expected, he said, that these licenses will be restored, as the state medical society at its recent meeting went on record by a unanimous vote of the house of delegates as favoring the revocation of license on conviction in the court.

OHIO

License Revoked.—The state medical board, April 6, revoked the license to practice of Dr. Frank M. Baldwin, formerly of Marion and more recently at 628 East Mound Street, Columbus. Dr. Baldwin was found guilty, it is reported, of producing abortions several months ago, and was sent to the state penitentiary for a term of from one to seven years; he is said formerly to have become insane, and to have been sent to the state hospital in Columbus.

PENNSYLVANIA

Hospital News.—The American Legion posts in the North Pennsylvania communities have donated a new ambulance to the Grand View Hospital, Sellersville.——The Luzerne county commissioners have started a movement for the erection of a tuberculosis hospital on a site near Drums, on the state road between Wilkes-Barre and Hazelton.

Annual Clinic.—The Westmoreland County Medical Society held its fifth annual clinic, May 6, at Greensburg. There were about 400 physicians in attendance. Drs. Frank H. Lahey and Elliott P. Joslin, both of Boston, conducted the clinics, and following the annual banquet in the evening, Dr. Lahey addressed the meeting on "The Modern Conception of Biliary Diseases," and Dr. Joslin, on "Medical Education Inside and Outside of the Medical School."

Personal.—Dr. Lloyd E. Wurster, Williamsport, has been elected president of the Roentgen-Ray Society of Central Pennsylvania.——Dr. Robert F. Ridpath has been appointed professor of rhinolaryngology at Temple University School of Medicine, Philadelphia.——Dr. Richard R. Spahr, Mechanicsburg, has been elected a member of the school board.——

Dr. John D. Boger, Lebanon, has been appointed roentgenologist to the Good Samaritan Hospital of that city.——At the eleventh annual meeting of the Tenth Councilor District Medical Society, June 10, Dr. Michael M. Rankin, Ridgeway, was presented with a handsome stickpin by the society in celebrating his fiftieth year in the practice of medicine.

Society News.—Dr. William Blair Mosser, instructor in surgery, University of Pennsylvania School of Medicine, addressed the Northumberland County Medical Society at Mount Carmel, May 6, on "Goiter."——Dr. Henry K. Mohler, associate in medicine, Jefferson Medical College of Philadelphia, addressed the Bucks County Medical Society on "The Heart."——The Fifth Councilor District Medical Society, comprising eight counties, met at Huntington, June 16, and was addressed by the president of the state medical society, Dr. Ira G. Shoemaker, Reading, and Dr. Harry W. Albertson, president-elect; Dr. W. Wayne Babcock, Philadelphia, professor of surgery and clinical surgery, Temple University School of Medicine, discussed the interpretation of abdominal symptoms, and Dr. Harold A. Miller, professor of obstetrics, University of Pittsburgh School of Medicine, spoke on puerperal morbidity.

Philadelphia

University News.—Dr. David H. Bergey has been promoted to professor of hygiene and bacteriology at the University of Pennsylvania School of Medicine; Dr. Morton McCutcheon to be assistant professor of pathology, and Dr. Stanley O. Chambers to be assistant professor of dermatology and syphilology.

Personal.—Dr. John H. Frick has been elected president of the Alumni of Temple University Medical School.——Drs. James A. and William Irwin will return from an extended tour of Europe about September 1.——Dr. John Norman Henry has been elected trustee of the University of Pennsylvania; Dr. Henry is also president of the general alumni society of the university, having occupied that position for several years.

Hospital for Crippled Children.—The Shriners' Hospital for Crippled Children, which has a capacity of 100 beds and occupies a 16-acre tract on Roosevelt Boulevard, was opened, June 24; this is the largest hospital of its kind established by the Shriners; it is a $500,000 structure, and will be equipped at an expenditure of $150,000. The trustees are now organizing a staff of thirty physicians to treat crippled children not over 14 years of age, whose parents are unable to provide treatment, the only other requirement being that the children be of normal mentality, and that there be reasonable hope of improving their condition. There are Shriners' hospitals for crippled children now in Chicago, St. Louis, San Francisco, Montreal, Shreveport, Twin Cities and Portland, Ore.

SOUTH DAKOTA

Personal.—Dr. Durward R. Jones, formerly director of the Pennington health department, has accepted the appointment of epidemiologist for South Dakota.

Dr. Adams Honored.—The employees of the Yankton State Hospital tendered a reception, July 1, in honor of Dr. George S. Adams, superintendent of the hospital, who, on that date, completed his twenty-fifth year of service at this institution. Dr. Adams has been superintendent of the hospital since January, 1920.

Society News.—Dr. Joseph C. Waterman, Burke, has been elected president of the newly organized South Dakota Public Health Officers Association, and Dr. John F. D. Cook, Langford, secretary.——The Rush reunion during the annual meeting of the state medical association at Aberdeen, May 19-20, was attended by forty-four Rush graduates; the guest of honor was Dr. Rollin T. Woodyatt, Chicago.

TEXAS

University News.—The University of Texas School of Medicine conferred the degree of doctor of medicine on sixty-eight graduates, May 31; the degree was conferred posthumously on Frank S. Wootters, who was killed in a street car accident a few weeks ago.

Health at El Paso.—Telegraphic reports to the U. S. Department of Commerce from sixty-five cities with a total population of about 29,000,000 for the week ending June 5 indicates that the highest mortality rate (25.4) was for El Paso, and that the rate for the group of cities was 12.3. The mortality rate for El Paso for the corresponding week last year was 15.9, and for the group of cities, 14.2.

GENERAL

Dr. Long Resigns Position in Chile.—Dr. John D. Long, formerly assistant surgeon general, U. S. Public Health Service, has tendered his resignation to be effective at once, as technical adviser in public health to the ministry of hygiene of Chile. Dr. Long was lent by the U. S. government to reorganize the national health service in Chile, his services having been requested through diplomatic channels. According to the Chicago *Daily News,* his efforts to reorganize the health service of Chile were blocked by petty politics of the Figueroa cabinet and the opposition of the property owning class, who were forced to make their tenements livable and sanitary (The Journal, July 4, 1925, p. 45).

Gynecologists on Tour.—The American Gynecological Club, of which Dr. George G. Ward, professor of surgery and gynecology, Cornell University Medical College, New York, is president, and Dr. Floyd Keene, secretary, sailed from New York on the S. S. *Resolute,* June 29, for a tour of obstetric and gynecologic clinics in Germany, Denmark, Sweden, Norway, Scotland and England. Eighteen members, most of whom were accompanied by their families, were listed in the announcement as comprising the party. When they arrive at Liverpool, August 5, there will be a joint meeting with the Gynecological Visiting Society of Great Britain; the arrangements for the itinerary terminate in that city, August 7. Letters may be addressed care of Thomas Cook and Son, P. O. 845, W. D. O., London, England.

Renewal of Permits Under National Prohibition Act.—Although permits under the National Prohibition Act, entitling physicians to prescribe or use, or to prescribe and use, intoxicating liquor, do not expire until Dec. 31, 1926, renewal applications must be filed on or after July 1, but not later than August 31, with the prohibition administrator of the district in which the physician practices. An extension of time for filing an application may be granted by the prohibition administrator, for good cause shown. The granting of such extension, however, lies within the discretion of the administrator, and in no case may the time limit be extended beyond November 30. Physicians failing to make renewal applications within the allowed time limits must apply as for a new permit, if permit privileges are desired. Applications should be made in triplicate on form 1404, copies of which may be secured from the prohibition administrators.

New Bulletin.—The Association of American Medical Colleges begins this month the publication of a quarterly bulletin which will be distributed without charge to persons especially interested in medical education and medical pedagogy. The first number has articles by Dr. Hugh Cabot, dean and professor of surgery, University of Michigan Medical School; Samuel P. Capen, Ph.D., chancellor, University of Buffalo; Dr. Harold S. Burr, assistant professor of anatomy, Yale University School of Medicine; Dr. David J. Davis, dean, University of Illinois College of Medicine, and Dr. Edward Stanley Ryerson, secretary, University of Toronto Faculty of Medicine. A section is devoted to editorials and news, and the remainder of the bulletin to abstracts from current literature. All communications should be addressed to the editor, Dr. Fred C. Zapffe, 25 East Washington Street, Chicago.

Government Economizes on Physical Examinations.—The U. S. Department of the Interior effected an economy of about $167,000 during the current fiscal year by eliminating certain physical examinations of claimants for pensions and by having certain other examinations made by physicians in the government employ. There were about 22,000 fewer medical examinations of applicants for pensions conducted by the pension bureau in the last final year than in 1925. The saving was largely in connection with the claims of Civil War veterans for pensions, among whom about 20,000 physical examinations were eliminated because of the advanced age of the veterans, and the recognized disability of many of them. These increased pensions were awarded on reliable testimony as to the need of attendance for these veterans, and as to their condition of helplessness. In about 2,200 pension claims, the physical examinations were conducted by physicians already in the government employ. In previous years such examinations had been made by local boards of examiners, a fee being paid each member of the board; the average cost of the examination was then about $7.75. The pension bureau also announced that it had reduced the number of its employees by fifty-one.

Organizations for the Hard of Hearing.—The seventh annual meeting of the American Federation of Organizations for the Hard of Hearing was held at Philadelphia, June

22-25, under the presidency of Dr. Gordon Berry, Worcester, Mass.; Mayor Kendrick welcomed the delegates and others, and the director of education and social economy, Joseph R. Wilson, welcomed them in behalf of the sesquicentennial exposition, and Dr. George M. Coates for the medical profession of Philadelphia. Dr. Wendell C. Phillips, President of the American Medical Association, who is chairman of the federation's committee on research, presided at the scientific session, June 24, and also presented a report for the committee. The purpose of the federation is to act in the fields of social work for the deafened; to encourage the founding of local organizations for the deaf and properly to carry on national propaganda in the interest of the deafened and in the prevention of deafness. One session of the meeting was devoted to social practice, another to the deafened child, another to a lip reading tournament. There was a trip to Valley Forge, Thursday afternoon, and a banquet in the evening; Dr. Gordon Berry was the toastmaster.

Sheppard-Towner Bill Sidetracked.—An unsuccessful effort was made in the Senate, June 15, to bring up for passage the bill to extend for two years the provisions of the Sheppard-Towner Infancy and Maternity Law. Senator Phipps, chairman, Committee on Education and Labor, inserted in the record the report of that committee, recommending that the Sheppard-Towner Law be continued for one year—and no longer. The report states that a date for the discontinuance of the law should be definitely established now; that the work in the several states is strictly a local function; that the states should stand on their own feet rather than lean on the central government, thus tending to impair the prestige, power and sovereignty of local self-government. The Sheppard-Towner Law was sharply criticized by Senator Reed of Missouri and by Senator King of Utah. Senator King said: "It seeks to perpetuate an undemocratic and a paternalistic policy which was adopted in a moment of hysteria and as a result of an adroit and subtle propaganda. The bill before us seeks to thrust the federal government into the states for the purpose of discharging duties and responsibilities which rest either upon the states or upon the people themselves. It is in line with the hysterical suggestions so often made that the states must be controlled by bureaucracy and that the people are incompetent to govern themselves and must therefore submit to a deadly paternalism or to an omnipotent and tyrannous bureaucracy. Congress, when it passed the measure which it is now proposed shall be continued in force for a further period, enacted that it should exist for only five years. But bureaucrats and those who hold jobs under that law propose to do as bureaucrats always seek to do, namely, continue indefinitely temporary organizations and bureaus and policies in order that they may have federal positions and push the federal government into local and state concerns." Senator King's statements were controverted by Senator Sheppard of Texas, co-author of the bill, and Senator Simmons of North Carolina. The former asserted that the measure "has more than vindicated itself and that if the states are given full and proper opportunity they will in a few years become sufficiently familiar with the situation and sufficiently trained in this work to carry it on as suggested by the committee; but to limit it at this time to one more year is to fix entirely too short a period." The impression has prevailed that the proponents of the Sheppard-Towner Law expected to establish this work as a permanent part of the federal government's activities at a cost annually of $1,240,000. The debate concluded by a statement which Senator Bingham of Connecticut inserted in the record from the Census Bureau. This statement showed that in the five states which have rejected the Sheppard-Towner Law and the federal appropriations offered thereunder, namely, Connecticut, Illinois, Kansas, Maine and Massachusetts, the deaths under one year per thousand were only 69.9, whereas in the twenty-eight states in the birth registration area that have accepted this aid, the deaths were 74 per thousand. The Children's Bureau is cooperating with fifteen states not in the birth registration area, and concerning such cooperation it was said: "Accurate birth and infant mortality registration is the first essential in getting information of infant mortality, one of the things the Children's Bureau was created to do. Yet the Children's Bureau, with full power to require birth and mortality registration in the 'plans' of states accepting the maternity act, has 'cooperated with' fifteen states in not registering births and infant deaths." Final action on the bill to extend the Sheppard-Towner Law is thus deferred; and it is doubtful whether the bill can be passed within the brief period remaining of the present session of Congress.

CANADA

Personal.—Dr. John G. McDougall, Halifax, was elected president of the Provincial Medical Board at the annual meeting, recently, and Dr. William H. Hattie, secretary-treasurer.——Dr. Arthur C. Jost, Halifax, has been elected executive officer of the Nova Scotia Tuberculosis Commission.——Dr. James L. Biggar, Ottawa, has been appointed chief commissioner of the Red Cross in Canada.——Dr. Robert T. McGibbon, assistant professor of anatomy, University of Manitoba Faculty of Medicine, Winnipeg, has been appointed professor of anatomy at the University of Saskatchewan.

Court Holds Town Responsible for Typhoid.—For the first time in Ontario, the judge of the supreme court has rendered a verdict against a municipality for typhoid due to neglect in protecting the water supply. A woman living in Owen Sound contracted typhoid in the autumn of 1925. The evidence showed that the water supply of the town was polluted and that the city authorities not only failed to observe the warnings of the health department but assured the public that the water was safe. The plaintiff showed that she drank no other water, used pasteurized milk, did not eat ice cream, that no flies gained access to her residence, and that four other members of the household who drank boiled water escaped infection. The judge rendered a verdict of $2,000 and costs in favor of the plaintiff.

Dr. Collip Graduates in Medicine.—James B. Collip, Ph.D., D.Sc., professor of biochemistry, University of Alberta Faculty of Medicine, Edmonton, received the degree of M.D., C.M., at the recent convocation at that school, and was given a rousing reception when the degree was conferred, according to the *Canadian Medical Association Journal*. Dr. Collip took his first two years in medicine at the University of Toronto, 1910-1912. He spent a number of years there in the department of biochemistry, and in 1921 became associated with Dr. Frederick G. Banting and others in the extraction and standardization of insulin. Since Dr. Collip's appointment as professor of biochemistry at the University of Alberta, he has isolated a hormone from the parathyroid glands which keeps the blood calcium in thyroparathyroidectomized dogs within normal limits, and prevents parathyroid tetany.

FOREIGN

British Medical Association.—The British Medical Association now has a membership of 31,117, an increase in the past year of more than 2,000 members, and an increase since 1922 of about 6,000. The association, which has expended in the last fifty years more than £40,000 on scholarships and grants, and more than £30,000 on the national insurance campaign, had its origin in a meeting held by fifty physicians in 1832 with Sir Charles Hastings, the founder, in the chair. The ninety-fourth annual meeting of the association will be held at Nottingham, July 20, and the annual dinner in that city, July 22, at the Palais de danse; full evening dress will be worn with decorations, and the price of the dinner is 12s. 6d., exclusive of wine.

Personal.—The *Ugeskrift for Læger* states that Dr. H. Mygind, Copenhagen, has been elected an honorary member of the German Otolaryngologic Society.——A bronze bust of Prof. E. Morselli was recently unveiled at the clinic for nervous and mental diseases at the University of Genoa, with tributes from all the Italian asylums to this leader in psychiatry.——Dr. B. J. Kouwer, Utrecht, was given an ovation at his last lecture as he retired from the chair of gynecology on reaching the age limit.——Dr. E. F. Neve, who has been in charge of the medical mission in Kashmir since 1886, retires this year, and is to be succeeded by Dr. H. T. Holland.——The Tunis medical prize of 5,000 francs has been awarded to Dr. E. Burnet, assistant director of the Pasteur Institute at Tunis, for his research on Malta fever.——The Académie des sciences at Paris has given the Monaco prize to Dr. Jean Charcot for his scientific expeditions and to help him in a new one he is undertaking in the *Pourquoi-Pas*.——Dr. J. A. Doléris, professor of gynecology, University of Paris, has been visiting in Argentina, where he has large landed interests.——Dr. George E. Nesbitt has been appointed professor of medicine in the Royal College of Surgeons in Ireland; Dr. Andrew H. Davidson, professor of midwifery and pharmacology, and Dr. Leonard Abrahamson, professor of pharmacology.——Dr. Jui-heng Liu, medical superintendent, Peking Union Medical College, Peking, has been elected president of the National Medical Association of China to serve for the next two years.——

Major Gen. Robert S. Hannay has been appointed honorary surgeon to the king to succeed Major Gen. Henry A. Hinge, retired.——Sir Humphry D. Rolleston delivered the annual oration before the London Dermatological Society, June 16, on "The Relations of Dermatology and General Medicine."——Prof. J. Fibiger of Copenhagen was tendered recently a complimentary dinner by the staff of the Cancer Hospital at London.——Dr. M. Reiss, Friedenstr. 60, Dortmund, is secretary for the third International Congress on Individual Psychology which opens at Düsseldorf, Sept. 29.——Dr. Margarete Zulzer, Berlin, has gone to the Central Hospital at Sumatra, on request, for a year of research in protozoan and spirochetal diseases.——The *Presse médicale* relates that proceedings have been instituted at Paris against twenty Russian physicians, refugees, who have been practicing medicine without having a French diploma. The obtaining of a diploma has been facilitated for those among them who served with the Allies or rendered services to France during the war.

Deaths in Other Countries

Sir John Williams, emeritus professor of midwifery, University College, London, May 24, aged 85.——**Sir James Cantlie,** formerly joint editor of the *Journal of Tropical Medicine,* London, May 28, aged 75.—**Sir Henry Morris,** former president of the Royal College of Surgeons, London, England, and founder and vice president of the Imperial Cancer Research Fund.——Dr. **F. Rohrer,** professor of physiology at the University of Basel, whose index for physical measurements was of great service during the war period.——Dr. **A. T. Johannessen,** emeritus professor of pediatrics at the University of Oslo, aged 77.——Dr. **A. Gayoso,** professor of psychology at Pernambuco.——Dr. **Gerhardt Hotz,** professor of surgery at the University of Basle, aged 46.——Dr. **A. Frouin** of the Pasteur Institute, Paris.——Dr. **A. Rachmanoff,** professor of obstetrics at the University of Moscow, aged 66.——Dr. **J. Teissier,** emeritus professor of clinical medicine at the University of Lyons.——Dr. **R. Diriart,** director of the public hospital at Pau. He had just stepped to an open window after finishing an operation when he collapsed and fell to the pavement below.——Dr. **R. Turro,** emeritus professor of physiology at the University of Barcelona, author of numerous works on biology, aged 73.

CORRECTION

Religious Healing.—In a series of articles on Religious Healing, it was stated that the American Guild of Health confined its work to Protestant churches other than the Episcopal. Rev. Franklyn Cole Sherman, president of the American Guild of Health, writes that most of the work is done at present in the Episcopal church. All the officers and the majority of the trustees are Episcopalian.

Government Services

New Naval Officers

The following senior students of Class "A" medical schools were commissioned lieutenants (junior grade) in the medical corps of the navy, June 9, and assigned to naval hospitals at the cities indicated for their internship:

BOSTON: Emmett F. Guy, Milwaukee; Clyde M. Longstreth, Afton, Iowa; Herbert T. Rothwell, Denver; George D. Gertson, Lidgerwood, N. D.; Cornelius G. Dyke, Iowa City; Bruce E. Bradley, University, Va.; Stephen A. Parowski, Chicago; Theophilus F. Weinert, Naperville, Ill.

NEW YORK: Fred E. Angle, Kansas City, Kan.; Welbourne F. Bronaugh, Hugo, Okla.; William J. N. Davis, Jr., Chicago; Joseph B. Gordon, Richmond, Va.; Gifford H. Henry, Tulsa, Okla.; Albert Ickstadt, Jr., Finley Park, Ill.; Verner P. Johnson, Minneapolis; Robert Krohn, Black River Falls, Wis.; Gerald W. Smith, Pittsburg, Kan.; Charles R. Wilcox, Mount Vernon, Iowa.

PHILADELPHIA: Harry D. Cowlbeck, Glens Falls, N. Y.; Edgar E. [illegible] Raymond W. Hege, [illegible] N. C.; Paul E. [illegible] Roy A. Boe, Soldier, Iowa; [illegible] Jackson, Jr., Philadelphia; Arthur R. Joerling, *Cincinnati;* [illegible] Lanark, Ill.; Franklin V. Sunderland, Edgewater, Colo.

SAN DIEGO, CALIF.: Claude R. Bruner, Powersville, Mo.; Glenn S. Campbell, Portland, Ore.; William D. C. Day, Seymour, Ind.; Paul S. *Ferguson,* Chicago; Charles S. Fowler, San Jose, Calif.; Walter F. James, Champaign, Ill.; Herman M. Maveety, *Cincinnati; French* R. Moore, Portland, Ore.; Albert T. Walker, Oakland, Calif.

WASHINGTON, D. C.: Alexander E Brunschwig, Evansville, Ind.; Charles B. Congdon, Hibbing, Minn.; Arthur W. Loy, Oberlin, Ohio; John C Vermeren, Chicago; Henry M Walker, Lebanon, Tenn.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 12, 1926.

Answer to the Attack on the General Medical Council

In previous letters I have described the attack on the general medical council in the form of a virulent press campaign, among other things for its removal from the medical register of Dr. Axham because of his acting as an anesthetist to Mr. Barker the bonesetter, who was unqualified, and also for the delay in considering his application for restoration to the register when he was in precarious health. Unfortunately, Dr. Axham died while the council was not in session before his case could be heard. At the opening of the present session, the president, Sir Donald Macalister, said that some misguided persons, for selfish ends unconnected with the applicant's interest, thought to sway the tribunal to hasty and partial action by means of popular clamor and denunciation directed against the council and its members. They abused the complaisance of the press, and misled the uninformed public regarding the facts. And by misrepresentation they sought to excite prejudice against the provisions of the law, expressly enacted to insure "that persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners." To these persons that distinction was no doubt professionally inconvenient, and to disparage the council, whose statutory function is to maintain it, might lead to the easier evasion of the law. The attempt to influence the council's judgment by threatenings against its constitution, if it did not yield to interested or ignorant demands, anticipated by a month or two the lawless attempt on a larger scale against the national constitution itself. From no single member of the council did the president receive a hint that it should do other than bear the attack with equanimity, and maintain meanwhile the impartiality of its position as a judicial body. The president was deeply grateful for the unanimous support of the members of the council in his refusal, as president, to summon it on his own responsibility. That would have been to take action which must tend to bias its opinion, in one direction or another, on a matter submitted for their independent judgment. Two different views were tenable on the merits of Mr. Axham's case, and were held by important professional bodies. There was reason to think that the factitious agitation against the council as an independent tribunal, instigated by unqualified persons under cover of Mr. Axham's name, but joined in by many who, ignorant of the facts, were moved by laudable compassion for his age and infirmities, has led indirectly to a better understanding of the council's duties in relation to the protection of the public and to the training and discipline of the medical profession.

In an editorial the *Times* characterizes as startling the comparison by the president of the Axham case to the general strike, and refers to the manner in which the address was received by the council as indicating a feeling that "it had emerged with great credit to itself and some benefit to the nation from a period of difficulty and danger." But the *Times* points out that the council has not emerged without a very important change in its membership; for the first time in its long history a layman has been appointed by the government to sit as a member. The *Times* thinks that such an appointment "suggests criticism of professional pedantry rather than gratitude for an inspiring example." It should be pointed out that in the clamor against the council the demand was made for the infusion of lay members on the ground that, being a purely medical body, it took a narrow view and was often actuated by a desire to protect the interests of the medical profession rather than those of the public. This was quite unfounded, though the government appears to have yielded to the clamor.

Effect of Cobra Venom on Plants

The Indian scientist Sir Jagadish C. Bose, F.R.S., addressed the Royal Society of Medicine on the action of cobra venom on the pulse beats of plants. He said that Strasburger held that the movement of sap was not affected by the action of poison. The lecturer's own experiments on the action of stimulants which revived a dying plant and of poisons which abolished the ascent of sap and killed a vigorous plant proved, however, that sap propulsion was brought about by a rhythmic propulsive tissue, which functioned both as the pumping heart and artery for the transport of the sap. By means of his electric probe, the propulsive tissue had been localized, and what might be called the electrocardiogram of the plant had been obtained. A mechanical record of the invisible pulse beat of the plant had been obtained by a new type of optical sphygmograph. It produced the stupendous magnification of from five to ten million times by means of a reflected beam of light. Drugs and alkaloids produced modifications of the pulse beat of the animal and the plant which were extraordinarily similar. Camphor, caffeine and musk were stimulants for both, while potassium bromide, cocaine and morphine were depressants. Minute doses of strychnine caused stimulation of the plant, while larger doses produced depression and toxic effect. Moderate doses of cobra venom, alike in the plant and in the animal, produced similar arrest of the pulse, followed by death. A preparation of venom known as shuchikavaran, the principal component of which was a minute quantity of cobra poison, had been employed in the Hindu system of medicine for nearly a thousand years. It was still used in desperate emergencies when a patient was on the point of death from heart failure. The preparation was held to be effective in reviving the activity of the failing heart. He found that minute doses of cobra venom caused a great stimulation of the pulsating activity of the plant. Injection of shuchikavaran in the blood stream of the animal in a state of depression was also found to produce a marked improvement in the frequency or amplitude of pulsation of heart beat. The simpler type of plant organization offered a unique advantage in investigation, the pursuit of which was sure to lead to the solution of many perplexing problems in the more complex animal life.

Sir William Leishman

Sir William Leishman, M.B., F.R.C.P., F.R.S., director-general of the army medical service, a great pioneer in the study of tropical diseases, has died at the age of 60 years. Born in 1865, the son of Dr. William Leishman, professor of midwifery in the University of Glasgow, he was educated at the University of Glasgow, where he graduated M.B., C.M., in 1886. He entered the army medical service as surgeon, and was gazetted captain in 1887, major in 1899, and brevet lieutenant-colonel in 1905, having served in the Waziristan expedition, in which he devoted himself to the subject of bacteriology, especially with regard to tropical medicine, and with such success that he was appointed assistant professor of pathology at the army medical school at Netley in 1900. After three years he was promoted to the post of professor of pathology in the royal army medical college at Millbank, London. He was elected a fellow of the Royal Society in 1910, and in the following year he served as president of the Society of Tropical Medicine and Hygiene, and in 1912 he was appointed honorary physician to the king. From 1913 to 1915, Leishman was a member of the yellow fever commission, West Africa; and he acted for a time on the medical and sanitary advisory committee for tropical Africa, and for ten years he was a member of the medical research council. His appointment to the highest post in the army medical service did not wean him from his scientific pursuits. He became chairman of the foot-and-mouth disease research committee appointed by the minister of agriculture. Only a few weeks ago he was elected president of the Section of Comparative Medicine at the Royal Society of Medicine. Second to Sir Almroth Wright, credit is due to him for antityphoid inoculation. The early attempts to produce a vaccination against typhoid fever had not been very successful, and experiences in the South African war with antityphoid vaccines led to their condemnation. Critics declared that the "cure was much worse than the disease." But Wright and Leishman went on with the work in which they believed. And the result was that, when the Great War came, typhoid fever, that old menace of armies, was practically eliminated. Leishman's greatest contribution to medicine was his work on the group of diseases which now bear his name—leishmaniasis. Before he began his work, the relation between the Indian kala-azar (black sickness), the so-called Oriental sore, and the Mediterranean type of kala-azar was not established. Leishman in 1900 discovered a body in the blood of a soldier affected with Indian kala-azar which is now known as the Leishman-Donovan body. This parasite is the cause of Indian kala-azar, and a similar parasite causes the Mediterranean form of the disease and also oriental boil. His army career contradicted the usual view that eminent scientific men are not good administrators. His services in the Great War won him mention in dispatches on three different occasions, and he was decorated C.B. in 1915, K.C.M.G. in 1918, commander of the Legion of Honor, and received the distinguished Service Medal of the U. S. Army.

Trypanosomiasis in Tanganyika

Reports on the recent outbreak of trypanosomiasis in the Ufipa district of Tanganyika have now been received by the colonial office. An area of more than 10,000 square miles is involved; fortunately, it is very sparsely peopled, the population averaging about one per square mile. Three thousand natives were removed to fly-free areas; approximately 300 cases of the sickness were found, and ninety deaths were ascribed to it. Treatment by "Bayer 205" and tryparsamide proved effective. The Tanganyika government is now extending its work on trypanosomiasis. Six physicians have been employed on it exclusively during the past year, and a distinct branch of the medical department to deal with the disease is being organized. Although the infection is widely spread, it has not attained the proportions of an epidemic. The total number of deaths among natives recorded in 1925 was only 161. No European died.

A British College of Nurses

An anonymous donation of more than $500,000 has been made to found a British College of Nurses, to be composed at first of foundation members, all of whom will be registered women nurses, and of foundation fellows occupying responsible official positions in the nursing world. After an initial period of grace, membership will be limited to registered nurses who pass an examination and pay an entrance fee. Such a diploma, it is suggested, will become essential for those who wish to gain higher posts in the nursing profession, and the higher professional status offered is designed to attract candidates of a desirable type to adopt nursing as their profession. The council of the college will appoint lecturers, teachers, inspectors and examiners; will offer legal advice to its members and fellows, and will provide for their assistance in sickness, accident or old age.

NETHERLANDS

(From Our Regular Correspondent)

May 19, 1926.

Proposed Consolidation of Government Medical Services

Heyermans proposes a single medical organization that will include all government services in connection with medicosocial work: insurance, public health service and the army and navy. Heyermans recommends the appointment of a general medical director, who would serve under the minister of health. The country would be divided into districts, each having its own administrative head. The medical department of each district would be accountable for all medical and public health services needed in connection with the various ministerial departments, the department of insurance, and the inspection of labor. The operating expenses of the medical department would be borne by the various organizations that made use of this medical service: the communes, department of labor, the government institute of insurance, the postoffice department, the administration of railways, the pension department, the army and the navy.

Milk Control

An experiment carried out by a dairy farm, which in 1910 decided to place its product under the control of the Pathologic Laboratory at Leiden, shows that the quality of milk from the bacteriologic point of view (50,000 bacteria per cubic centimeter is the maximum permitted) is determined almost entirely by the conditions under which the milking is done. The warm summer months have very little to do with its keeping qualities.

Statistics of Infectious Diseases

The report of the public health service for the year 1924 contains the following: There were 1,187 cases of typhoid fever with a mortality of 161. The general morbidity was 164 per 10,000 population. Scarlet fever caused fifty-four deaths out of 6,635 cases. There were 4,134 cases of diphtheria with 237 deaths. Eighty cases of epidemic encephalitis, with fifty-three deaths, were reported; it is probable, however, that there were many more cases which were not diagnosed.

Congress on Vocational Guidance

A national congress on vocational guidance was recently held under the honorary chairmanship of the burgomaster of Amsterdam, M. De Vlugt. Two subjects were presented and awakened a lively discussion. Gerhard dealt mainly with the ethical and economic factors of vocational guidance. Dr. Van Wayenburg, director of the psychotechnical laboratory, discussed vocational guidance from the medical angle.

Pertussis Vaccine

The trials with pertussis vaccine from the state serologic institute are being continued in the hospitals. Brouwer has published the results secured in an Amsterdam institution in treating thirty-eight children from 2 months to 3 years old. The children were vaccinated as soon as the diagnosis was established. Those presenting clinical symptoms of pertussis received a subcutaneous injection every two days, the others every three days. The dosage varied with the ages of the subjects. When used prophylactically, four injections were given; when used therapeutically, the number was increased. No untoward reactions were noted. The results appear to have been favorable from the curative point of view. The epidemic was, on the whole, mild. Paroxysms were neither frequent nor violent, although vaccination did not eliminate them. There were no complications. It does not seem likely that the mildness of the epidemic can be attributed to the fact that the source of infection was itself a mild case. The youngest children were sick much longer and presented more violent symptoms. It should be noted that, in these young children, the interval between the preventive and the curative injections was from five to three months. The prophylactic value of vaccination remains doubtful, since, although the thirty-eight children in the institution were vaccinated, they contracted whooping cough.

Sodoku, or Rat-Bite Fever

In a thesis presented to the faculty of medicine of Amsterdam, Melle Ruys treats sodoku, or rat-bite fever, from the clinical and experimental point of view. She succeeded in finding the causal spirochete in three out of 250 rats. She found also a similar but less virulent spirillum in mice.

Comparison of Urban and Rural Tuberculosis

In cooperation with the League of Nations' research to determine the rural and urban incidence of tuberculosis, the public health service report for 1925 contains a study based on the application of the Pirquet test. The figures for the cities of Rotterdam and Amsterdam are compared with those of three rural provinces: Gelderland, Drenthe and Zeeland. In the cities there was 49 per cent of positive reactions; in the rural sections, 52 per cent, slightly in favor of the urban centers.

International Congress on the History of Medicine

The sixth International Congress on the History of Medicine will be held at Leyden and Amsterdam, July 18 to July 23, 1927; chairman, Dr. De Lint. One feature of the congress will be a section on paintings, books and medals.

PRAGUE

(From Our Regular Correspondent)

May 15, 1926.

Birthday of Professor Haškovec

The present dean of the Czech Medical Faculty of Prague, Prof. Ladislav Haškovec, celebrated his sixtieth birthday, May 18. His scientific publications number 114 papers, not including numerous reviews and reports. In 1904 he founded a monthly periodical, the *Review of Neurology and Psychiatry*, of which he is still editor. Not only have his papers been published in the Czech medical journals, but they are to be found in French periodicals. His chief contributions to medical science are research on the functions of the thyroid gland, investigation into the effect of alcohol on the heart and the blood circulation, and studies on the structure of the nervous tissue in paralysis agitans. The neurologic syndrome akathisia bears his name in the international scientific nomenclature.

New Chief of Clinic

The successor of Professor Jaksch-Wartenhorst, chief of the clinic for internal diseases at the German Medical Faculty in Prague, is Prof. Theodor Brugsch of Berlin. Professor Brugsch is 45 years old and is a pupil of Friedrich Kraus of Berlin. With Schittenhelm, he worked up the problem of gout. In a series of papers he dealt with the problem of constitution, and in recent years he has occupied himself with the study of metabolism.

Water Supply in Bohemia

Bohemia, along the mountainous boundaries, has a great number of public water supplies, but in the flat center of the province water supplies require large investments because the pipes must be laid for long distances to bring the water from its sources. In order to make the building of water supplies easier for those parts of the province which are very rich agricultural regions, a type of water supply for a group of communities has been worked out. Thirty-seven such group water supplies have been completed, with a total length of pipes of 130 miles. Thirty-three other projects are under construction. The greatest number of communities that one of these projected water supplies is to serve is seventy. Since 1918, the building of 288 individual water supplies for single communities has been started, with a total length of pipes of 460 miles. Of this number, eighty-five systems have been completed, with a total length of pipes of 232 miles.

Congress of Society for Roentgenology and Radiology

The first congress of the Czechoslovakian Society for Roentgenology and Radiology was held in Prague, May 22-24, under the presidency of Prof. R. Jedlicka of Prague. Radium was first isolated from the uranium ore of Jachymov, Bohemia. The congress held its sessions in four sections. The first section dealt with roentgenologic diagnosis; the second, with the physics and technic of radiology; the third, with biologic problems of radiology and roentgenology, and the fourth, with treatment of pathologic conditions by the means of roentgen rays and radium. The paper by the chief of the department of physics at the Institute for Radiology, Dr. F. Behounek, was read by title, because, at the time of the congress, he was participating in Amundsen's expedition to the North Pole.

League Against Tuberculosis

The Masaryk League against Tuberculosis held its annual meeting in Prague, May 15. The annual report shows the growth of this organization. The league suffered a heavy loss through the recent death of its president, Dr. F. Malinsky. Up to last year the tuberculosis work in Slovakia was done by the Red Cross because of the lack of workers. During last year the league organized a branch office for Slovakia and sixty new local chapters. By this measure the league has finally covered the whole territory of the Czechoslovak Republic. The tuberculosis mortality continued to decline during last year. The league comprises 278 local branches. There are 37,935 paying members. The league during the past year has been developing its educational activities through lectures, exhibits and printed material. The first antituberculosis film of Czechoslovak origin was put into circulation. The bulletin of the league completed its sixth volume with a circulation of 4,500 copies. The regional conferences of tuberculosis workers, organized by the regional committees, have become important. Because the conferences are accompanied by papers on scientific topics, they are well attended by the members of the medical profession and serve to spread antituberculosis propaganda. The chief task of the league is the erection of tuberculosis dispensaries. There exist at the present time 174 such stations in the whole country. The league has been pushing the organization of family colonies for children from tuberculous families along the lines of the French Oeuvre Grancher. The paying of fees of the tuberculous in sanatoriums forms one of the largest items in the expenditures of the league.

Infectious Diseases

The State Statistical Institute recently published figures concerning infectious diseases during 1920-1924. The year 1921 can be considered a truly epidemic year. Typhoid in September and October rose as high as sixty cases per hundred thousand, and in winter sank to thirty. In 1921 the highest rate was 102 for the month of September. The incidence for the year 1924 was 48.8. Through the year 1920 scarlet fever incidence was very low. The year 1921 witnessed a big epidemic of scarlet fever with the peak in October, 1921, when the rate was 210 per hundred thousand population. The following years showed regular epidemics in the fall, with the maximum incidence in October, the rate being around 100 per month. This is to be explained by the change in the age distribution of the population which came about by the enormous fall in the birth rate during the war and consequently by an almost complete disappearance of the population susceptible to scarlet fever infection. The rise of the birth rate was again followed by a rise in the incidence of scarlet fever. The scarlet fever incidence for the year 1924 was 68.7. Diphtheria continues to be as rare as it was during the war. Its incidence varies around twenty-five cases per hundred thousand population. The years 1920 and 1921 have brought large epidemics of dysentery, in the summer months attaining a rate more than 210 per hundred thousand. Typhus fever has become a negligible factor among the contagious diseases; the rate for the year 1924 was 0.3 per hundred thousand. The same holds for smallpox, the rate of which declined to 0.1 per hundred thousand in 1924 owing to the strict enforcement of compulsory vaccination throughout the country.

BERLIN

(From Our Regular Correspondent)

May 22, 1926.

Nervous Disturbances and Smallpox Vaccination

In recent months articles have been appearing in the medical literature of many countries on the apparent development of affections of the central nervous system associated with smallpox vaccination. For example, there have been observations on poliomyelitis and encephalitis, in the Netherlands, Czechoslovakia, Switzerland, and other countries. Doubts will naturally arise in regard to the causal connection between smallpox vaccination and the aforementioned affections. Winkler, in a recent article, reaches the conclusion that the affinity of the smallpox virus for the nervous system is slight, and states that all his attempts to bring about artificial infections were unsuccessful. He does not consider that the rare cases of encephalitis that have followed smallpox vaccinations were due to vaccine virus, but he does not deny that the virus might weaken the resistance of the body to the causative agent already present. In an earlier article, Professor Salomon of Vienna, who has been sojourning in Buenos Aires for some time, expressed the opinion that vaccination might possibly have a bearing on general paralysis. The allergy of the organism, and especially of the skin, which occurs in vaccination, may play a rôle in the dissemination of the spirochetes of syphilis, since it makes more difficult the localization of the spirochetes in the skin, and thus prevents the development of a syphilitic allergy and facilitates greatly the development of metasyphilitic manifestations. He brings out that since the introduction of vaccination there has been considerable increase of paralysis affections. Daraskiewicz, in another article, reaches similar conclusions. In regions in which there is no organized vaccination of the population, general paralysis is rare. In patients with general paralysis he has never seen smallpox scars, but vaccination scars were always present. Kolb, the director of a psychopathic institution in Erlangen, on the basis of statistical researches on the frequency of softening of the brain in many countries, does not regard a connection between general paralysis and smallpox vaccination proved, though he does consider it possible. Professors Plaut and Jahnel have reached the conclusion that the theory is entirely untenable, for, if smallpox vaccination were necessary to the development of general paralysis, then softening of the brain would never occur in unvaccinated persons. In Mexico the investigators found pure-blooded Indian paralysis sufferers who were pitted from smallpox. Of seven undoubted cases of general paralysis, two presented smallpox scars; of three probable cases, one revealed scars. They found two further paralysis patients without vaccination scars among the negroes of the St. Elizabeth Hospital in Washington. Since 1902, when smallpox vaccination began to be strictly enforced in Cuba, no increase in softening of the brain has been observed. In contrast with Cuba, Kräpelin and Plaut found general paralysis frequent in Mexico, in various race groups, although smallpox vaccination is not strictly enforced and the incidence of smallpox is accordingly high. Under these conditions, it would be equally plausible to ascribe the dissemination of paralysis to the spread of smallpox.

Since general paralysis existed before smallpox vaccination was in vogue, there is no justification for the statement that general paralysis appeared simultaneously with smallpox vaccination. Also the experiences of immunology are opposed to the idea of a connection between general paralysis and smallpox vaccination. That smallpox, as well as other infectious diseases (for example, malaria), may exert a curative effect on syphilis is now fully accepted. But such an influence could not be exerted unless the smallpox infection happened to follow the infection with syphilis. Smallpox, however, when there is no vaccination, usually occurs in childhood, so that the age-groups that are exposed to syphilitic infection are generally immune to smallpox. Since smallpox, when an epidemic occurs among an unvaccinated and smallpox-free population, has an average mortality of 25 per cent, it would carry off one fourth of all syphilis patients, whereas the mortality of syphilis patients with softening of the brain is only from 5 to 10 per cent. In the year 1871-1872, before the introduction of compulsory vaccination, 8,286 persons died in Bavaria of smallpox, whereas in 1922 only 272 persons died from general paralysis in the psychopathic institutions of Bavaria.

Some Results of the Census in Bremen

The Bremen statistical office is the first to publish results of the general census taken June 16, 1925. Since the report is based on an almost exclusively urban population, the statistics cannot be regarded as typical of Germany as a whole. The adjacent table shows the representation of the various age-groups, in 1900 and in 1925.

Age Group	Men		Women	
	1900	1925	1900	1925
1-14	32,379	35,661	32,287	34,123
15-25	25,120	36,142	26,115	36,951
26-40	27,391	38,726	26,074	45,946
41-60	18,392	41,579	20,452	41,239
Above 60	5,748	11,669	8,113	15,610
Total	109,030	163,777	113,041	173,869

It will be noted that, in spite of the marked increase in the population, there has been no particular increase in the number of children. However, the increase in the older age-groups amounts to more than 100 per cent.

The percentage of unmarried persons has dropped from 62.1 and 57.4 in 1900 to 51.8 and 48.1, respectively, in 1925. More than half of the female population was married, or had been married. Since 1910, the male population of Bremen had increased 11.6 per cent and the female population 16.0 per cent.

Marriages

Hamline A. Mattson, Minneapolis, to Miss Esther Westman of Cannon Falls, Minn., June 18.

Felix Christian Rykken, Bellingham, Wash., to Miss Agnes Jean Lee of Everett, May 22.

Louis P. Hiniker, St. Paul, to Miss Elizabeth Berchmanns Sullivan of Minneapolis, June 10.

August J. Streit, Marlin, Texas, to Miss Carrie Knox Williams of Fort Worth, June 10.

Deaths

Henry Milton Whelpley ⊕ St. Louis; Missouri Medical College, 1890; professor of physiology, histology and microscopy and director of the biological laboratory at his alma mater, 1890-1900; professor of materia medica and pharmacy, Washington University Medical School, 1901-1911; professor of practical pharmacognosy, St. Louis College of Pharmacy, 1884-1922, and dean, 1904-1925; member of the American Pharmaceutical Association (president 1901, treasurer 1908-1921), the U. S. Pharmacopeial Convention (secretary, board of trustees) and vice president of the American Microscopical Society; aged 64; died, June 26, at Argentine, Kan.

Henry Skinner, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1884; formerly state entomologist of Pennsylvania; president of the American Entomologist Society, 1909; editor of *Entomological News,* 1890-1911; member of the committee on nomenclature; International Zoological Congress; aged 65; died, May 29, of chronic nephritis.

Aaron Robert Wheeler ⊕ St. Louis, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1879; formerly mayor, postmaster and member of the board of health; for twenty years president of the board of education; aged 67; died, May 1, of pneumonia.

Louis Schwab ⊕ Cincinnati; Medical College of Ohio, Cincinnati, 1883; member of the Cincinnati Obstetrical Society; formerly county coroner, health officer and mayor of Cincinnati; since 1904 member of the board of education; aged 75; died, June 4, of myocarditis.

Richard H. Smith, Havre de Grace, Md.; University of Maryland School of Medicine, Baltimore, 1875; member of the Medical and Chirurgical Faculty of Maryland; on the staff of the Havre de Grace Hospital; aged 76; died, May 13, of paralysis agitans.

Michael O'Hara, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1890; Spanish-American War veteran; formerly on the staffs of St. Agnes Hospital and the House of Good Shepherd; aged 56; died, June 9, of heart disease.

James Shannon, Seattle; University of California Medical School, San Francisco, 1887; member of the Washington State Medical Association; on the staffs of the Columbus and Providence hospitals; aged 67; died, May 28, of coronary thrombosis.

Joseph Henry Saunders, Wellesley Hills, Mass.; Medical School of Harvard University, Boston, 1900; formerly assistant in clinical medicine, Tufts College Medical School; aged 53; died, May 14, at Boston, of mitral regurgitation.

Carl Estep Bosley, Silver City, N. M.; State University of Iowa College of Medicine, Iowa City, 1913; member of the New Mexico Medical Society; served during the World War; aged 42; died, May 2, of pulmonary tuberculosis.

Thomas H. Brayshaw ⊕ Glenburnie, Md.; College of Physicians and Surgeons, Baltimore, 1885; formerly professor of climatology and hygiene, Maryland Medical College, Baltimore; aged 66; died suddenly, in May, of heart disease.

Charles T. Gallagher ⊕ Mount Sterling, Ohio; Cincinnati College of Medicine and Surgery, 1892; formerly state senator; mayor of Mount Sterling; aged 56; died, June 6, at the Grant Hospital, Columbus, of encephalitis.

Howard Burton Bartholomew, Cobleskill, N. Y.; Yale University School of Medicine, New Haven, 1914; member of the Medical Society of the State of New York; aged 40; died, March 20, of pneumonia and diabetes.

William Joseph Smith ⊕ Ozone Park, N. Y.; Georgetown University School of Medicine, Washington, D. C., 1924; on the staff of the Mary Immaculate Hospital; aged 29; died, May 30, of pulmonary tuberculosis.

James A. Swafford, Sherman, Texas (licensed, Texas, under the Act of 1907); for six years county health officer and for four years city health officer; aged 70; died, May 9, of myocarditis, following influenza.

Henry Tull, Kinston, N. C.; University of Pennsylvania School of Medicine, Philadelphia, 1876; member of the Medical Society of the State of North Carolina; aged 72; died in May, of mitral regurgitation.

⊕ Indicates "Fellow" of the American Medical Association.

Joseph Addison Overstreet, Kingfisher, Okla.; Bellevue Hospital Medical College, New York, 1883; member of the Oklahoma State Medical Association; aged 67; died, May 27, of carcinoma of the stomach.

John E. Coles, Alberene, Va.; University of Virginia Department of Medicine, Charlottesville, 1882; member of the Virginia Medical Society; aged 65; died, May 11, at Los Angeles, of angina pectoris.

Edward Francis Crofutt, Brooklyn; Yale University School of Medicine, New Haven, 1904; for three years on the staff of the Brooklyn State Hospital; aged 45; died, June 1, at the Kings County Hospital.

Benjamin L. Long, Hamilton, N. C.; University of Maryland School of Medicine, Baltimore, 1881; member of the Medical Society of the State of North Carolina; aged 74; died, April 29.

Charles C. Housmyer, Dillsboro, Ind.; Eclectic Medical Institute, Cincinnati, 1904; member of the Indiana State Medical Association; aged 46; died, May 22, of cerebral hemorrhage.

Leigh K. Baker, Cleveland; Cleveland College of Physicians and Surgeons, 1887; Western Reserve University School of Medicine, Cleveland, 1890; aged 63; died, in May, of cerebral hemorrhage.

William B. James ⊕ Port Huron, Mich.; Detroit College of Medicine and Surgery, 1899; recently appointed city health officer; aged 55; died, May 14, of acute hemorrhagic pancreatitis.

John M. Thompson, Old Washington, Ohio; Ohio Medical University, Columbus, 1905; aged 51; died, April 21, at the Mount Carmel Hospital, Columbus, of embolism, following phlebitis.

George W. Crosthwait, Florence, Tenn.; University of Louisville School of Medicine, 1870; member of the Tennessee State Medical Association; aged 79; died, May 31, of myocarditis.

Alexander L. Robinson ⊕ New York; George Washington University Medical School, Washington, D. C., 1889; aged 63; died, June 4, at the Presbyterian Hospital, of pernicious anemia.

John A. Reily, Patton, Calif.; Homeopathic Medical College of Missouri, St. Louis, 1898; member of the California Medical Association; aged 51; died, May 14, of bronchopneumonia.

William Miller Orr, Chattanooga, Tenn.; Vanderbilt University Medical Department, Nashville, 1882; member of the Tennessee State Medical Association; aged 70; died, March 8.

Eli B. Brown, Billings, Mo.; College of Physicians and Surgeons, Keokuk, 1876; member of the Missouri State Medical Association; aged 80; died, May 12, of arteriosclerosis.

Charles Watkins Robb, Goodlettsville, Tenn.; Vanderbilt University Medical Department, Nashville, 1879; aged 68; died, May 26, at a sanatorium in Madison, of angina pectoris.

Edward Howard Babcock, Brooklyn; Long Island College Hospital, Brooklyn, 1891; also a dentist; aged 62; died, May 27, at the Long Island College Hospital, of pneumonia.

Isaac Hawkins Moore, Wilkes-Barre, Pa.; Jefferson Medical College of Philadelphia, 1866; aged 83; died, May 28, of intestinal obstruction and hemorrhage of the stomach.

Howell Sylvester Bontecou ⊕ Beacon, N. Y.; University of Pennsylvania School of Medicine, Philadelphia, 1902; veteran of the World War; aged 49; died, May 19, of diabetes.

Martin P. Boyd, Yuma, Tenn.; University of Tennessee College of Medicine, Memphis, 1878; member of the Tennessee State Medical Association; aged 87; died, March 25.

George W. Gracy, Uhrichsville, Ohio; Ohio Medical University, Columbus, 1894; member of the Ohio State Medical Association; aged 68; died, May 22, of heart disease.

Elizabeth S. Lynch, San Francisco; Hahnemann Medical College of the Pacific, San Francisco, 1889; aged 77; died, May 30, of cerebral hemorrhage and heart disease.

Alvey S. Hoover, Stamps, Ark.; Memphis Hospital Medical College, 1889; member of the Arkansas Medical Society; aged 67; died, May 31, of cerebral hemorrhage.

Alfred Cheatham Stokes, Trenton, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1869; aged 79; died, April 15, of acute dilatation of the heart.

Alvin A. Wertman ⊕ Tannersville, Pa.; Jefferson Medical College of Philadelphia, 1889; aged 62; died, May 8, at the Jefferson Hospital, Philadelphia, of pneumonia.

Clifford Charles Parrish, Fort Sumner, N. M.; Atlantic Medical College, Baltimore, 1908; World War veteran; aged 46; died, recently, of tuberculosis.

John Clayton Sherman, Haynesville, La.; Vanderbilt University Medical Department, Nashville, Tenn., 1901; aged 49; died, May 21, of tumor of the brain.

Benjamin F. Hatfield, Union, Ind.; Medical College of Ohio, Cincinnati, 1882; aged 70; died, May 30, of carcinoma of the face and interstitial nephritis.

Henry Cook Windel ⊕ Williston, N. D.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1902; aged 55; died in April, of acute appendicitis.

Samuel R. Rodgers, Mount Airy, Ga.; Vanderbilt University Medical Department, Nashville, 1876; aged 74; died, April 26, following a long illness.

Harrison Edward Stroud, Los Angeles; University of Colorado School of Medicine, Denver, 1885; aged 69; died, May 10, of cerebral hemorrhage.

Frank Clifford Carle ⊕ Garrison, Iowa; State University of Iowa College of Medicine, Iowa City, 1904; aged 53; died, May 16, of cerebral hemorrhage.

William Caulk, Easton, Md.; University of Maryland School of Medicine, Baltimore, 1867; aged 81; died, May 18, at St. Michaels, of senility.

Joseph Michael Stroup, Mount Orab, Ohio; Cincinnati College of Medicine and Surgery, 1889; aged 61; died, April 3, following a long illness.

William Wade Morris, Preston, Va.; Jefferson Medical College of Philadelphia, 1860; Civil War veteran; aged 90; died, May 13, of senility.

William Harvey Reinhart, Polk, Ohio; College of Physicians and Surgeons, Baltimore, 1882; aged 69; died, June 7, of cerebral hemorrhage.

Henry E. Jewell, Oklahoma City; Hahnemann Medical College of Philadelphia, 1884; aged 68; died, May 10, at a local hospital of carcinoma.

C. B. Sproles, Bristol, Va. (licensed, Virginia, under Exemption Law of 1895); aged 75; died, May 3, at Benham, of chronic nephritis.

Andrew J. Graham, Little Rock, Ark.; University of Arkansas Medical Department, Little Rock, 1881; aged 64; died, May 4, of leukemia.

Arthur S. Scott, Laingsburg, Mich.; Detroit College of Medicine and Surgery, 1894; aged 62; died, May 17, of bronchopneumonia.

Franck Hyatt ⊕ Washington, D. C.; University of Maryland School of Medicine, Baltimore, 1872; aged 75; died, June 2, of asthma.

William Edward Bridge, Bonham, Texas; American Medical College, St. Louis, 1899; aged 57; died, May 30, following an appendectomy.

Macy B. Searls, East Aurora, N. Y.; University of Buffalo Department of Medicine, 1869; aged 79; died, April 14, of arteriosclerosis.

Robert M. Little, East St. Louis, Ill.; Washington University Medical School, St. Louis, 1899; aged 60; died, May 25, of myocarditis.

Joseph Thomas Roberts, San Marcos, Texas; University of Louisville School of Medicine, 1896; aged 54; died, May 19, of myocarditis.

Franklin H. Maxam ⊕ Princeton, Ind.; Bellevue Hospital Medical College, New York, 1877; aged 76; died, May 31, of pneumonia.

Commodore I. Cain, Rome, Ga.; Meharry Medical College, Nashville, Tenn., 1891; aged 64; died, May 22, of erysipelas of the face.

Elisha I. Hook ⊕ Chicago; Rush Medical College, Chicago, 1889; aged 67; died, May 25, at Mobile, Ala., of arteriosclerosis.

Chester Isaac Pease, Calumet, Okla.; Rush Medical College, Chicago, 1889; aged 60; died, May 18, of angina pectoris.

Manton A. Floyd, St. Stephens, S. C.; College of Physicians and Surgeons, Baltimore, 1893; aged 56; died, April 25.

John B. Cary, Donnellson, Ill. (licensed, Illinois, 1878); aged 82; died, June 5, of cerebral hemorrhage.

J. G. Roberts, Peel, Ark. (licensed, Arkansas, 1903); aged 66; died, April 1, of chronic nephritis.

David F. Laughlin, Clyde, Kan. (licensed, Kansas, 1902); died, May 17.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

J. P. FERNEL (FURNO) AND F. O. CARTER

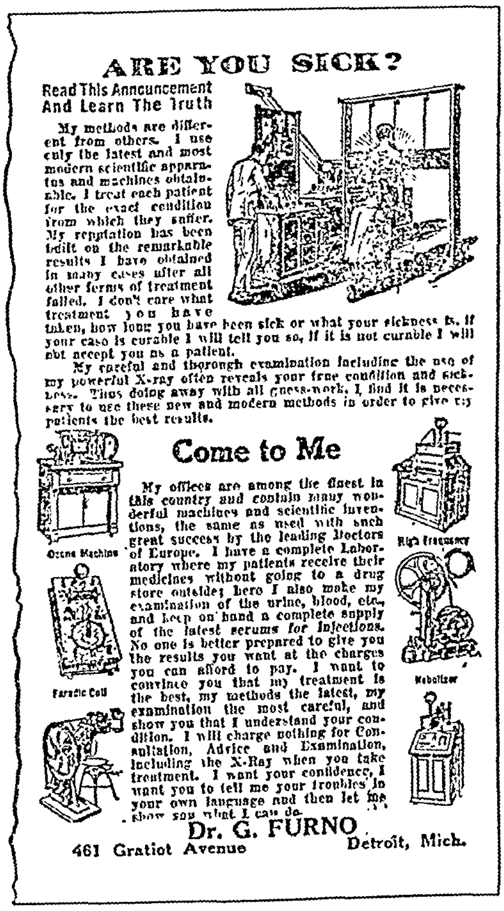
A "Plastic Surgeon" and an "Eye Specialist" Lose Their Illinois Licenses

A Chicago paper for June 22, 1926, under the heading "Two Doctors Lose Right to Practice Here" carried the following item:

> "J. Paul Fernel, self-styled plastic surgeon, and Dr. Franklin O. Carter, who advertises that he is an eye specialist, yesterday lost the right to practice medicine in Illinois. The medical committee of the state board of registration revoked their licenses.
>
> "Fernel, who lost his license for the second time in nine years, was charged with having operated on the face of Mrs. Bertha Long, 6237 South Park Avenue. He used the knife on Mrs. Long's face, saying he would make her beautiful. The operation was a failure, according to the testimony, and resulted in disaster for Mrs. Long.
>
> "In the testimony against Carter, attorneys representing Elino Mancino, who lost his eye after a Carter operation for cross-eyes, charged at least eight persons had lost their sight following similar operations."

FERNEL'S PROFESSIONAL RECORD

John Paul Fernel's name originally was Giovanni Furno. He was born in Italy in 1889 and was graduated by the Illinois College of Medicine in 1911, receiving an Illinois license the same year and a Michigan license, through reciprocity with Illinois, in 1916. Furno's Illinois license was first revoked in June, 1920, because of dishonorable conduct. Furno's license was restored by the Illinois board in 1922 during the tenure of office of the notorious W. H. H. Miller, who was later convicted of selling licenses, and removed.



ARE YOU SICK?

Read This Announcement And Learn The Truth

My methods are different from others. I use only the latest and most modern scientific apparatus and machines obtainable. I treat each patient for the exact condition from which they suffer. My reputation has been built on the remarkable results I have obtained in many cases after all other forms of treatment failed. I don't care what treatment you have taken, how long you have been sick or what your sickness is. If your case is curable I will tell you so, if it is not curable I will not accept you as a patient.

My careful and thorough examination including the use of my powerful X-ray often reveals your true condition and sickness. Thus doing away with all guess-work. I find it is necessary to use these new and modern methods in order to give my patients the best results.

Come to Me

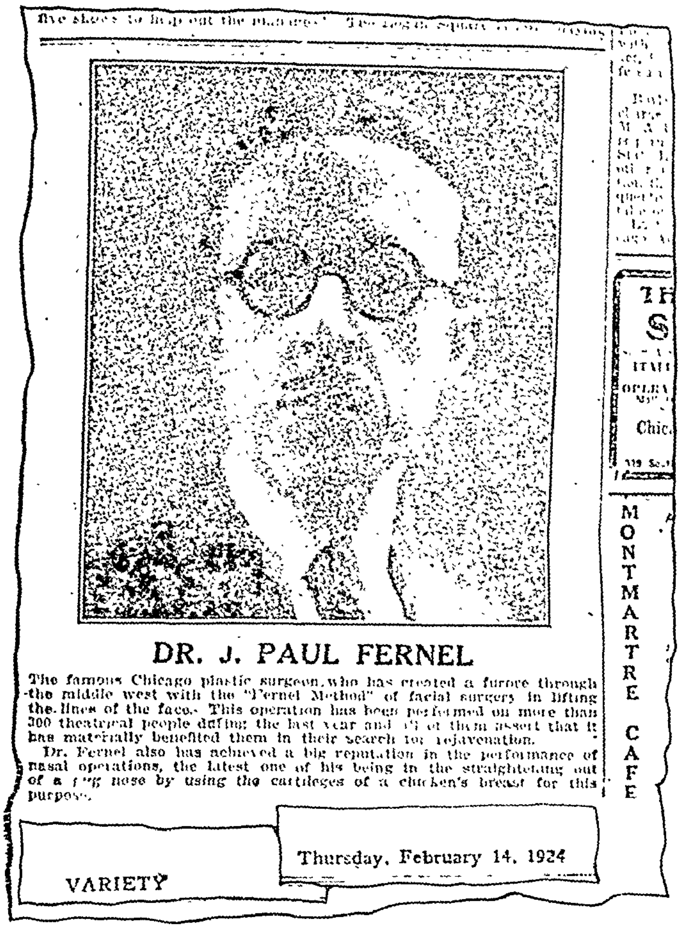
My offices are among the finest in this country and contain many wonderful machines and scientific inventions, the same as used with such great success by the leading Doctors of Europe. I have a complete Laboratory where my patients receive their medicines without going to a drug store outside; here I also make my examination of the urine, blood, etc., and keep on hand a complete supply of the latest serums for Injections. No one is better prepared to give you the results you want at the charges you can afford to pay. I want to convince you that my treatment is the best, my methods the latest, my examination the most careful, and show you that I understand your condition. I will charge nothing for Consultation, Advice and Examination, including the X-Ray when you take treatment. I want your confidence, I want you to tell me your troubles in your own language and then let me show you what I can do.

Dr. G. FURNO

461 Gratiot Avenue Detroit, Mich.

A greatly reduced photographic reproduction of one page of a six-page advertising leaflet used by J. P. Fernel when he was in Detroit, Michigan. At that time Fernel had not changed his name from Giovanni Furno to its present form. The other five pages of the leaflet were in as many foreign languages.

For some time prior to 1916, Furno lived in Chicago. About that time he went to Michigan and opened an office in Detroit. In June, 1919, The Journal received a request from the Detroit authorities for information regarding Furno, who, it was alleged, was at that time advertising (as "G. Furno") to treat "nervousness, manly weakness and any other blood disease." Later, according to Detroit officials, Furno was served with a warrant and brought in to the police court, where he pleaded "Not guilty," was bound over to a higher court under $500 bail and. before the case was called to the higher court, "jumped his bail" and left the state. The Detroit officials reported that Furno's method was to get foreigners as patients and compel them to disrobe and enter an adjoining room for physical examination, and while this was going on a confederate (Furno's alleged wife) went through the pockets of the victim to determine the amount of the fee it was possible to obtain. As the result of these methods, the Detroit papers recorded in July, 1919, that nine of Furno's patients started suit against him.



DR. J. PAUL FERNEL

The famous Chicago plastic surgeon, who has created a furore through the middle west with the "Fernel Method" of facial surgery in lifting the lines of the face. This operation has been performed on more than 300 theatrical people during the last year and all of them assert that it has materially benefited them in their search for rejuvenation.

Dr. Fernel also has achieved a big reputation in the performance of nasal operations, the latest one of his being in the straightening out of a pug nose by using the cartileges of a chicken's breast for this purpose.

Thursday, February 14, 1924

VARIETY

After Giovanni Furno became J. Paul Fernel and moved to Chicago, he went into the "plastic surgery" field, having taken lessons from a Chicago advertiser in the same line of business. Here is reproduced a piece of publicity that appeared in a theatrical publication. The up-to-date seeker of publicity does not purchase advertising space; he hires a press agent, who gets him before the public by means of news stories.

Another part of Furno's scheme, according to the Michigan authorities, was that of collecting additional money from those of his victims who had about reached the limit of their donations, by purporting to have a blood examination made. The Michigan authorities sent the American Medical Association some of the "analytical reports" said to have been used by Furno in furthering this scheme. These bore the legend "International Medical Laboratory, Columbus Building, 32 North State Street, Chicago, Ill." There was no such concern as the "International Medical Laboratory," nor any Columbus Building at 32 North State Street. There is a "Columbus Memorial Building" at 31 North State Street, but there was not and never had been such an institution as the "International Medical Laboratory" in this building.

From Detroit Furno came back to Chicago, and, in October, 1919, is said to have entered into an agreement with a Chicago "plastic surgeon" (of the advertising type) to be taught the gentle art of removing sagging cheeks, baggy eyelids, hump noses, wrinkles, etc. While his preceptor was on a trip out of the state, Furno is said to have seized the opportunity to copy a list of the "plastic surgeon's" patients. On the return of the man from whom he was taking lessons, Furno discontinued his instruction and opened up a competing office in the city of Chicago. This, too, in spite of the alleged fact that he had entered into a contract not to practice "plastic surgery" in Chicago.

In the latter part of 1923, Furno, under his new name Fernel, corresponded with the Michigan authorities, seeking information regarding another Chicago physician who was apparently his most active competitor in the plastic surgery field. This other individual, like Fernel, had previously been in trouble in Michigan, and, also like Fernel, had "jumped his bail" and left the state. Also he obtained his Illinois license during the Miller régime. The fight between these two "plastic surgeons" was a spirited one, but Fernel's competitor, while having a professional record far worse than Fernel's, seems to have kept the upper hand—so far.

CARTER'S RECORD

Franklin O. Carter has worked the cure-for-cross-eyes game in and from Chicago. The name of F. O. Carter appears first in Polk's Medical Directory in 1902, in which issue he had a paid notice claiming to be a physician graduated from *Toronto University, Toronto, Ontario,* 1897, and to be a postgraduate of the Chicago College of Ophthalmology and Otology in 1898. He was then located at 70 West Madison Street. This was in 1902, although Carter was not legally licensed to practice medicine in Illinois until 1904, at which time he received a state license and gave as his school of graduation, not Toronto University, but Jenner Medical College. The records of Toronto University show that no man by the name of F. O. Carter was ever graduated by that school in medicine.

The records of the Jenner Medical College show that Carter was graduated from the school in 1904. We have no record of any such institution as the "Chicago College of Ophthalmology and Otology," at which Carter claims to have taken postgraduate work in 1898. Possibly it was one of the numerous concerns which teach spectacle fitting by mail.

In July, 1918, Franklin O. Carter was called before the Department of Registration and Education of the State of Illinois to explain certain things about his practice. It was brought out at this hearing that, while Carter was graduated by Jenner Medical College in 1904, "his diploma has an erasure on it so as to give out the impression that he graduated at a different time." Carter was asked about this erasure but denied that it had been done with his knowledge or consent.

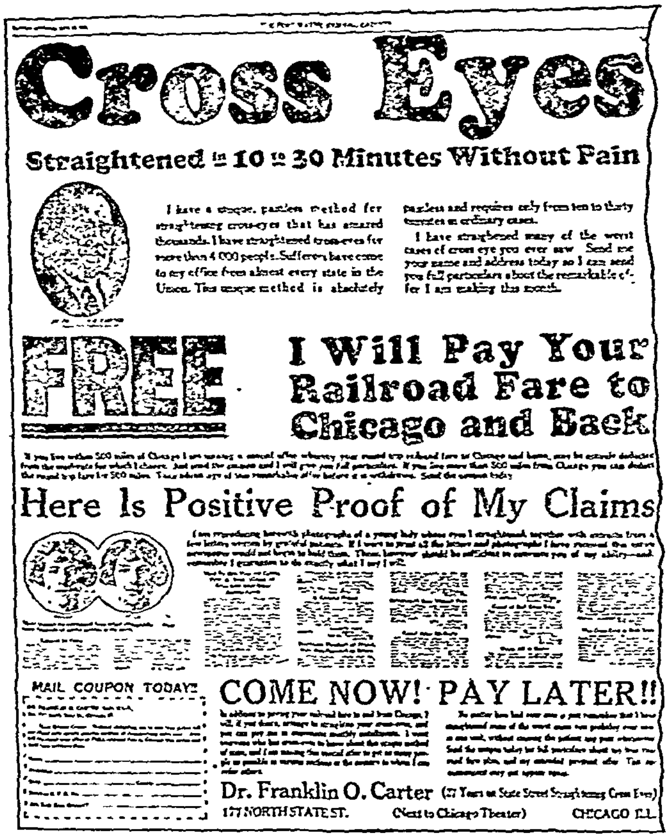
A clipping from the Chicago *Tribune,* dated March 10, 1922, reads as follows:

> "Damages of $15,000 for the loss of the sight of his right eye were awarded to Irving Nilson, 3836 North Whipple Street, yesterday from Dr. *Franklin O. Carter,* an eye specialist, with offices at 120 South State Street, by a jury in Judge Pam's court. It was the second trial of the suit, the first resulting in a verdict of $11,000 for Nilson."

Another clipping from the Chicago *Daily News* of November 20, 1922, states that a jury, before Judge Lee S. Carrier, in the Superior Court, had awarded one Alexander Hockerin judgment of $25,000 damages from Dr. Franklin O. Carter for the loss of his right eye.

Chicago newspapers for October 27, 1923, record the fact that on October 26, 1923, Franklin O. Carter filed a voluntary petition in bankruptcy in the District Court. His liabilities were scheduled at more than $45,000 and his assets listed at slightly more than $6,000. According to the petition, Carter owed $25,100 to Alexander Hockerin and $15,100 to Irving Nilson, both of them debts incurred through damage suits brought against Carter for injuring the eyes of the victims.

In March, 1925, a Chicago attorney brought to our attention the case of his client Mr. S., who claimed that in September, 1922, he answered a Carter advertisement, and after receiving the "come-on" literature, came in from his home in Wisconsin to Chicago, and was operated on by Carter and his associate. Mr. S. claims that, after putting in a local anesthetic they "clipped the muscles in both eyes with a small curved pair of snips." They told him to go back to work, and come back later for the final operation. In November, 1922, Mr. S. came back to Chicago, and claims that Carter and his associate cut the muscles in his left eye and took eight or ten stitches, and sent him back home. Before he got home he claims that his eye began to swell and the upshot of the case was that the eye became so badly infected that on December 3, 1922, it was removed. On April 23, 1925, according to his attorney, a jury rendered a verdict fixing damages in favor of Mr. S. against Franklin O. Carter for $21,500. The judge, however, considered this excessive and Mr. S., through his attorney, remitted $6,500 and judgment was entered for $15,000. It will be interesting to see whether poor S. is any more successful in getting damages than some of the other victims have been.



Cross Eyes

Straightened in 10 to 30 Minutes Without Pain

I have a unique, painless method for straightening cross-eyes that has amazed thousands. I have straightened cross-eyes for more than 4,000 people. Sufferers have come to my office from almost every state in the Union. This unique method is absolutely painless and requires only from ten to thirty minutes in ordinary cases.

I have straightened many of the worst cases of cross eye you ever saw. Send me your name and address today so I can send you full particulars about the remarkable offer I am making this month.

FREE

I Will Pay Your Railroad Fare to Chicago and Back

Here Is Positive Proof of My Claims

MAIL COUPON TODAY!

COME NOW! PAY LATER!!

Dr. Franklin O. Carter

177 NORTH STATE ST. (Next to Chicago Theater) CHICAGO ILL.

A greatly reduced *reproduction of a full-page advertisement of* Franklin O. Carter. In the original this advertisement occupied three square feet (18 by 24 inches).

So far as our records show Carter was licensed only in Illinois; Fernel (Furno) however, still holds a license in Michigan. Will he go back to that state, or will Michigan take action to prevent such a move? The Department of Education and Registration of Illinois is to be commended for its action in protecting the people of that commonwealth from incompetence and quackery.

Rest as Aid to Digestion.—To rest before eating a heavy meal is an aid to digestion. It is not always convenient to lie down, but the body and mind can be relaxed for a short period before and after eating. Sometimes it is necessary to work to the very time for taking nourishment. Whenever it is possible, slow down a little before meals. When very tired and very hungry, a cup of hot milk sipped slowly will delay the hunger for the time being. After a period of complete relaxation, the heavy meal will be enjoyed more, and unhealthful reaction which might have been felt from eating when overtired will be avoided. If there is time to rest and to change from work to other clothes, so much the better. Sometimes changing the apparel before dinner has a wholesome effect on the mind and aids digestion.—Wood, T. D., and Dansdill, T.: By-Ways to Health, 1925, p. 21.

Correspondence

MISTAKES IN TERMINOLOGY

To the Editor:—There can be no doubt as to the high quality of the scientific work of the medical profession in this country. The same cannot be said of the standard of scholarship as shown by many of our medical publications. Mistakes in the simplest Latin terminology are constantly seen which would never be made by those who had been educated in Europe.

One of the most frequent errors, which has lately been brought to my attention, occurs in connection with the words labium majus and labium minus, which have been frequently misspelled in excellent publications appearing in high class journals. Examples of such errors include "the left labium minorum," "the whole of the right labiae majorae and minorae" and the "right labia majora." One author has spoken in the same sentence of the "labiae" and the "labia."

The majority of physicians seem to have forgotten that majus is the neuter form of the word meaning greater, the masculine and feminine endings being major, and that the proper termination of the word meaning lesser is minor (masculine), minor (feminine) and minus (neuter).

Another frequent mistake in terminology is the failure to remember that words ending in "ma" are neuter. While nearly all Latin words ending in "a" are feminine, those in which the "a" is immediately preceded by "m" are always neuter, such as edema, ecthyma, leukoderma, sarcoma and chloasma.

Howard Fox, M.D., New York.

PRESERVATION OF WHITE CELL SOLUTIONS

To the Editor:—No doubt it is a common annoying experience for physicians to find their white cell solutions on standing contaminated with molds and especially yeasts. It has been experimentally proved that gentian violet even in high dilutions possesses the power of checking the reproductive mechanism of bacteria. I have applied this by adding one or two drops of gentian violet to the white cell solution (150 cc. of 0.5 per cent acetic acid) and have found no contaminating yeasts or molds after standing for a few months at room temperature.

Max Trumper, A.M., Philadelphia.

SUBSTITUTES FOR EPHEDRINE

To the Editor:—The experimental and clinical investigations of the action of ephedrine, reported by us separately in a number of recent publications, were carried out with ephedrine sulphate or hydrochloride, made in the laboratory of pharmacology of Peking Union Medical College according to the method described by one of us (Chen, K. K.: A Pharmacognostic and Chemical Study of Ma Huang [Ephedra Vulgaris Var. Helvetica], *J. Am. Pharm. A.* **14**:191 [March] 1925). We have recently had some experience with a preparation of so-called ephedrine hydrochloride, which was sold by a druggist in Philadelphia who obtained it from an English drug house, the source and method of preparation being unknown. This sample of the drug was not effective clinically in the control of asthma in a patient who had been completely relieved by the Peking product (Miller). Experimentally it was capable of relaxing the bronchial spasm produced in pithed cats by physostigmine (Schmidt). Its melting point and optical rotation are not those of pure ephedrine hydrochloride, or of pure pseudo-ephedrine hydrochloride, its optical isomer, and it does not give the color reactions of ephedrine and pseudo-ephedrine (Chen). The nature of the material is therefore uncertain.

This is reported as a warning against the indiscriminate use of any preparation that does not meet the standards of identification that were described by Chen.

T. Grier Miller, M.D., Philadelphia.
K. K. Chen, Ph.D., Madison, Wis.
Carl F. Schmidt, M.D., Philadelphia.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MORPHINE AND GLYCERYL TRINITRATE—ANOREXIA IN TUBERCULOSIS

To the Editor:—1. In a patient who has suffered from severe general convulsions at periods, I have been giving at the first suggestion of the onset of an attack liberal doses of glyceryl trinitrate, followed quickly by a large dose of morphine and atropine intramuscularly, followed by more glyceryl trinitrate. The patient is a woman past middle age, with a systolic blood pressure of 180. At the onset of a convulsion, it rises to 240 or 260. Does morphine modify the action of nitroglycerin in any way and does the reverse occur in such a case; i. e., does nitroglycerin modify the action of morphine? If so, in what way? 2. In the anorexia of tuberculosis, is it advisable to urge eating, even though food has to be swallowed without relishing it?

Reginald Van Woert, M.D., Ravena, N. Y.

Answer.—1. Nitrites, or substances yielding nitrite in the body, have some value in lessening convulsions, especially those accompanied by high blood pressure. Morphine, as well as atropine, has a tendency to dilate the vessels of the skin, in this way reinforcing the vasodilator action of the nitroglycerin. The morphine is also endowed with antispasmodic action in certain types of convulsions.

2. The patient's anorexia does not lessen the need for improved nutrition in tuberculosis. It merely increases the difficulty of accomplishing this result. Urging a patient to eat must be done very tactfully and by the indirect suggestion of serving appetizing and attractive food, rather than by direct command. The patient should never be forced to eat, as this may arouse resentment and cause him to take less than he otherwise would.

DIATHERMY

To the Editor:—The recent visit to my office of an agent selling diathermy apparatus, his denial that tissue injuring can be done by promiscuous use of these machines in the hands of "panacea experts," and the reading of Thomas H. Cherry's article in The Journal, June 5, prompt me to make the following remarks: I may state, before going further, that I have used diathermy and believe it has a field along with all other heat-producing methods used in the healing art. Dr. Cherry says in his article that he has heated a dog's rectum and bladder to 52 C. without histopathologic changes. He also says that tissue is definitely destroyed at 60 C. and that changes probably begin to occur at temperatures varying between 55 and 58 C. (Osler's Modern Medicine **1**:54, 55, 1907) heat exhaustion and insolation often reach 112 and 113 F., and that a temperature of 110 F. has been recovered from. I have had a case of heat exhaustion in which the temperature was 110 F., and the patient recovered. Osler further says under pathology in this article that the gross pathologic changes may be expressed in one phrase: general congestion of all organs, particularly the meninges of brain and cord. Microscopic studies show that the cells of the liver, the kidney and the nervous system all undergo parenchymatous degeneration, the nervous system, in particular, showing chromatolysis. These victims always have permanent mental and physical impairment following these extreme heats, showing that at temperatures of from 110 to 113 F., permanent tissue injury is done to the human body. Dr. Cherry states that 52 C. produces no histopathologic change in tissue. Now 52 C. equals 125.6 F.; 58 C. equals 136.4 F.; 60 C. equals 140 F. If temperatures of 110 F. and up produce detrimental tissue changes which can be checked physically by the microscope and clinically by symptoms of the victim, are we justified in believing that diathermy, given as it is, empiric as to temperature, does not produce locally what external heat may do to the whole body; namely, a permanent change in the tissues treated, which hastens their senility or degeneration? This subject needs more light and, certainly, caution.

Edward M. Mikkelsen, M.D., Chicago.

Answer.—For the local application of medical diathermy that is, the heating within physiologic limits of well defined parts of the body, it is permissible to raise the temperature to from 40 to 45 C. (104 to 113 F.) with the proviso that the individual tolerance be taken into consideration. The patient should report a pronounced sensation of warmth but not a sensation of painful heat.

Temperatures beyond 45 C., while not necessarily leading to complete coagulation of albumin, produce injury in the tissues which is known as precipitation of globulins.

In general diathermy, usually called autocondensation, the safety limit is the raising of the temperature up to 2 degrees C. (3.6 degrees F.) above the normal. Higher temperatures are apt to lead to severe disturbances. In deciding on the heating of parts of the body, it should always be kept in mind that in applying medical diathermy it is absolutely unnecessary to produce excessive degrees of heat. The desirable physiologic and therapeutic effect is brought about by moderate heating, causing an active hyperemia and the subsequent amelioration of the local metabolism.

GLYEUTHYMENOL

To the Editor:—I frequently receive circulars advertising glyeuthymenol. Can you give me any information concerning the reliability of the concern and the value of the product?

F. E. Perkins, M.D., Watertown, N. Y.

Answer.—A report of the Council on Pharmacy and Chemistry on Glyeuthymenol was published in The Journal, Nov. 15, 1924, page 1606.

In the information furnished the Council by the proprietors, Nixon Stuart & Barker, the product was stated to have the following composition: thymol, 30 grains; menthol, 20 grains; eucalyptol, 20 minims; synthetic oil of wintergreen, 30 minims; Indian gum powder, 3½ pounds; sodium benzoate, 10 ounces; glycerin, 2½ gallons; zinc sulphate, 6 ounces, and water, 7½ gallons.

The Council reported that the advertising designates glyeuthymenol as a "vaginal prophylactic" and stresses its use as a preventive of gonorrhea and as a contraceptive, thus: "The douche cannot always be effective for protoplast may lurk in microscopic cavities irremovable and untouchable by the douche. While glyeuthymenol in instant union with mucous fluids must needs penetrate the most infinitisimal fissure there to accomplish its task of prophylaxis. If you accept the hypothesis of contra peristalsis of the uterus in orgasm the douche is doubly ineffective, while glyeuthymenol will pass into the uterus with protoplast if such be present. If there is contra peristalsis at orgasm glyeuthymenol would be truly prophylactic against internal uterine Gonorrhoea."

The Council concluded that glyeuthymenol is an unscientific mixture that is sold with claims which are misleading and unwarranted and that its use is inimical to the public health.

RETENTION OF URINE AND BLADDER PARESIS

To the Editor:—A woman, aged 32, cannot void. She has to be catheterized two or three times a day regularly to relieve ballooning up of the bladder and pain. The urine is normal. The general physical examination is negative. I have used at intervals strychnine, sodium bicarbonate, atropine and all kinds of urinary medicines which might have helped, but without avail. The only relief is by catheterizing regularly and "strapping the bladder," putting a pad over it and securing it by applying adhesive plaster across the abdominal wall. After a couple of weeks this will relieve the patient so that she can urinate for a like period, when it recurs. Can you suggest any further measures or a cause of this paresis.

Reginald Van Woert, M.D., Ravena, N. Y.

Answer.—Complete or incomplete retention of the urine in the female bladder is based either on central disturbances or on partial dislocation of the bladder produced in prolapsus uteri or by instrumental delivery. The presence of a foreign body within the viscus or a pedunculated endovesical tumor may act as an obstruction to the internal urethral orifice. In order to arrive at a causative diagnosis indispensable for a rational treatment, a thorough neurologic, gynecologic and cystoscopic examination will be essential.

"METHENAMINE"

To the Editor:—Can you tell me anything about a drug "Methenamine" and where I might get it It was mentioned in an abstract in The Journal, June 5, p. 631.

E. W. W., M.D., Pittsburgh.

Answer.—Methenamine is the name now used in the new U. S. P. X. which became official, January 1, for the substance described in the old pharmacopeia as hexamethylenamine; it is a more convenient contraction of the scientific name hexamethylenetetramine. All manuscripts sent to The Journal are, of course, edited in accordance with the nomenclature of the latest edition of the Pharmacopeia.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alabama: Montgomery, July 13-16. Sec., Dr. S. W. Welch, Montgomery.

Arizona: Phoenix, July 6. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

California: San Francisco, July 12-15. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

Colorado: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Connecticut: Hartford, Reg. Bd., July 13-14. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Bd., New Haven, July 13. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

District of Columbia: Washington, July 13. Sec., Dr. Edgar P. Copeland, Suite 110, 1801 Eye St., N. W., Washington.

Hawaii: Honolulu, July 12-15. Sec. Dr. A. L. Davis, 1254 Emma Street, Honolulu.

Indiana: Indianapolis, July 13-15. Sec., Dr. Wm. T. Gott, 421 State House, Indianapolis.

Maine: Augusta, July 6-7. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

Massachusetts: Boston, July 13-15. Sec., Dr. Frank M. Vaughan, Room 144, State House, Boston.

North Dakota: Grand Forks, July 6. Sec., Dr. G. M. Williamson, Grand Forks.

Oregon: Portland, July 6-8. Sec., Dr. U. C. Coe, 1208 Stevens Bldg., Portland.

Pennsylvania: Philadelphia and Pittsburgh, July 6-10. Director Education, C. D. Koch, Harrisburg.

South Dakota: Custer, July 20. Director, Med. Lic., Dr. H. R. Kenaston, Bonesteel.

Utah: Salt Lake City, July 6. Dir., Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

Washington: Olympia, July 6. Director, Dept. of Licenses, Mr. Charles R. Maybury, Olympia.

West Virginia: Martinsburg, July 6. Sec., Dr. W. T. Henshaw, Charleston.

Wyoming February Examination

Dr. G. M. Anderson, secretary of the Wyoming Board of Medical Examiners, reports the written examination held at Cheyenne, Feb. 1-3, 1926. The examination covered 12 subjects and included 120 questions. An average of 75 *per cent* was required to pass. One candidate took the examination and passed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
University of Colorado School of Medicine		(1925)	89.2

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University Medical School		(1923)	Utah
St. Louis University School of Medicine		(1906)	Oklahoma
University of Tennessee College of Medicine		(1913)	Oklahoma

West Virginia January Examination

Dr. W. T. Henshaw, secretary of the West Virginia Public Health Council, reports the oral, written and practical examination held at Charleston, Jan. 19, 1926. The examination covered 11 subjects and included 108 questions. An average of 80 per cent was required to pass. Of the 8 candidates examined, 4 passed and 4 failed. Seven candidates were licensed by reciprocity and 1 by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Number Passed
Howard University School of Medicine		(1925)	1
Washington University School of Medicine		(1924)	1
Medical College of Virginia		(1924)	1
University of Pozsony, Hungary		(1909)*	1

College	FAILED	Year Grad.	Number Failed
University of Louisville School of Medicine		(1925)	1
Meharry Medical College		(1925)	1
University of Catania, Italy		(1899)*	1
University of Naples, Italy		(1923)*	1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College		(1897)	California
University of Louisville School of Medicine		(1910)	Kentucky
Tulane University of Louisiana School of Medicine		(1923)	Alabama
University of Maryland School of Medicine		(1914), (1923)	Maryland
Jefferson Medical College of Philadelphia		(1923)	Maryland
Medical College of Virginia		(1924)	Virginia

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Kentucky School of Medicine		(1906)	U.S.P.H.S.

* Verification of graduation in process.

Book Notices

L'Exploration fonctionnelle du foie et l'insuffisance hépatique. Par Drs. Noël Fiessinger et Henry Walter. Paper. Price, 30 francs. Pp. 387, with illustrations. Paris: Masson & Cie, 1925.

The increasing interest in the functional study of the liver is shown by the appearance of this volume. In scope and subject matter it is similar to other recent treatises in English and German. The authors are familiar with the work done in other countries, but the references are almost wholly French. As such it is of particular value as a general rather than critical summary of the French literature and point of view in a confused and disputed field. American readers will be most struck by the insistence that the extrahepatic formation of bilirubin is largely a pathologic phenomenon. The formation of urobilin in the tissues likewise is denied by the most recent American investigators. One agrees with the conception of "asynergie fonctionnelle" and the necessity for "l'exploration plurifonctionnelle" in hepatic disease. The selection of the urobilin in the urine, the Hay test, the ammonia coefficient in the urine, the determination of glycosuria after giving fructose, and the phenoltetrachlorphthalein test as the most useful tests for this purpose is open to question. The American practice justifiably places the chief emphasis on the study of the blood. The same difference in point of view is evident in the discussion of the clinical evidences of hepatic insufficiency. The authors give a much needed warning when, in conclusion, they point out the difficulties in the laboratory study of functional changes in the liver. Functional tests are useful in confirming clinical findings, but decisions affecting prognosis or the direction of treatment should be chiefly determined by the clinical examination. They add further that though this last remains the province of the clinician, he should be a well grounded and keen observer and free from that superficial haste which, in order to see rapidly, examines poorly.

The National Formulary. By Authority of the American Pharmaceutical Association. Prepared by the Committee on National Formulary of the American Pharmaceutical Association. Official from July 1, 1926. Fifth edition. Buckram. Price, $3.50. Pp. 545. New York: Chemical Catalog Company, 1926.

The fifth edition of the National Formulary appears somewhat later than the new (tenth) edition of the U. S. Pharmacopeia, which became official, January 1. The former becomes official, July 1. The new edition is similar in general plan to the preceding edition, Part I containing formulas, Part II containing descriptions of drugs, and Part III containing descriptions of various tests and reagents with various tables. The number of formulas has been decreased by thirty-five, and the number of descriptions of drugs increased by twenty-five. The increased volume of the new edition is largely accounted for by the addition of a great deal of tabular matter to Part III.

The preface states that the work of revision has been carried on coordinately with that of the Committee of Revision of the U. S. Pharmacopeia, and the following statement of purpose and scope emphasizes this fact:

> The purpose of the National Formulary is to supply definite formulas for preparations that are sufficiently used in medical practice throughout the United States and its possessions, for which formulas are not included in the Pharmacopeia of the United States, and to provide standards and tests for the identity, quality and purity of the essential ingredients used in those formulas for which standards are not provided in the Pharmacopeia of the United States, so that uniformity in the physical properties and therapeutic action of these constituents and of the preparations will be assured.

This statement is rather less frank and outspoken than the similar one in the fourth edition, which ran, "The scope of the present National Formulary is the same as in previous issues, and is based on medical usage rather than on therapeutic ideals." As far as usefulness from the point of view of therapeutics is concerned, the fifth is but a slight improvement on the fourth edition: both describe a host of useless and superfluous drugs and a comparatively small percentage of drugs which have real therapeutic value.

Modern Medicine. Its Theory and Practice in Original Contributions by American and Foreign Authors. Volume I. Bacterial Diseases—Non-Bacterial Fungus Infections—The Mycoses. Edited by Sir William Osler, Bart., M.D., F.R.S. Third edition. Reedited by Thomas McCrae, M.D., Professor of Medicine in the Jefferson Medical College, Philadelphia, Assisted by Elmer H. Funk, M.D., Assistant Professor of Medicine, Jefferson Medical College, Philadelphia. Third edition. Cloth. Price, $9. Pp. 845, with 58 illustrations. Philadelphia: Lea & Febiger, 1925.

The third edition of the best known system of medicine appears twelve years after the first volume of the second edition was published. A moment's thought will convince any physician of the fact that new discoveries have been sufficient in scope to warrant a complete revision of the work. In the preface Dr. McCrae lists only a few of the significant contributions, calling attention particularly to the fact that diseases such as botulism and epidemic encephalitis are distinctly new, and that methods of treatment of scarlet fever, bronchial asthma and diabetes have been revolutionized. Several of the noteworthy contributors to the second edition have died in the interval that has elapsed. It has been necessary to substitute for them recent investigators in the fields concerned. The present volume opens with two noteworthy contributions—an essay on the evolution of internal medicine by William Osler, and an introduction into the study of infectious diseases by Ludvig Hektoen. These scholarly essays serve to orient the general reader and to give him a proper point of view for the consideration of the individual articles that follow. The first volume covers bacterial and fungus infections. When a practical presentation of medical knowledge such as this has once been achieved, it is a worthwhile task to keep it constantly up to date and of a quality established by the original series. This the editor has done exceedingly well.

Die Malariabehandlung der progressiven Paralyse. Unspezifische Therapie der Metalues des Zentralnervensystems, mittels kunstlicher Erzeugung einer akuten Infektionskrankheit. Von Privatdozent Dr. Josef Gerstmann, Assistent der Universitätsklinik fur Psychiatrie und Nervenkrankheiten in Wien. Mit einem Vorwort von Professor Dr. Julius Wagner-Jauregg, Vorstand der Universitatsklinik für Psychiatrie und Nervenkrankheiten in Wien. Paper. Price, 12 Goldmarks. Pp. 229, with 16 illustrations. Vienna: Julius-Spring, 1925.

This is the most comprehensive work thus far published on the malaria treatment of general paralysis. The book represents an experience of seven years with malaria treatment at the Vienna psychiatric clinic under the directorship of Wagner-Jauregg. While more than a thousand general paralytic patients have been inoculated with malaria, the author deals more particularly with the results in a series of 400 cases treated up to 1922. He thus eliminates from consideration the more recently treated cases, in which the results might be regarded as inconclusive because of the relatively short period that has elapsed since the completion of treatment. The best therapeutic results have been obtained in middle-aged patients in the early stages of general paralysis. As contraindications, the author mentions especially serious heart lesions and obesity. The technic of inoculation is simple. From 2 to 4 cc. of blood is withdrawn from a malaria patient and injected directly under the skin. If it is desired to inoculate patients at a distance, the blood may be mixed with a solution of sodium citrate. In this way its infectivity may be preserved for thirty-six hours or longer. Following a subcutaneous inoculation, the incubation period ranges from seven to fourteen days. The amount of fever and the number of malarial paroxysms that a patient is allowed to have are graduated according to the patient's condition and the way the treatment is borne. The average is from eight to ten paroxysms. The fever usually rises above 104 in each attack, and an axillary temperature of 107.6 has been recorded. A cardiac stimulant may be administered during the course of the fever. The malaria may be promptly cured by quinine given in 0.5 Gm. doses twice a day. While some clinicians advise following malarial treatment by a course of neo-arsphenamine, the author believes that the beneficial results obtained from malaria are to be attributed to the malaria itself rather than to any subsequent treatment. Gerstmann believes that it is permissible and perfectly safe to carry out the malarial treatment even in localities where anopheles mosquitoes are indigenous. It is pointed out that the malarial parasite propagates in the human host in an asexual cycle and that, as a result, after the first few passages from patient to patient, gametocytes are no longer present in the blood. The author accepts as conclusive the experimental work done on this problem, which apparently demonstrated that anopheles mosquitoes were not able to transfer this form of artificial malaria from one person to another. In 30 per cent of the cases a full remission occurred, with disappearance of mental symptoms and restoration of former ability to work. In an additional 14 per cent a partial remission occurred with capacity to return to work, although some residual defect symptoms persisted. The death rate was 10 per cent. The remaining 43 per cent of the patients were not influenced by the treatment or showed only transitory improvement. The clinical improvement is not necessarily accompanied by any corresponding serologic improvement. It was noted, however, that a serologic improvement may appear some months or even years after a clinical remission is established. The author discusses the interesting question as to the possible influence of the treatment on the brain. He believes that the observations so far made indicate that when a clinical remission occurs there is a corresponding lessening of the pathologic process, and possibly an arrest of the progress of the brain disease. Gerstmann's work forms a most valuable contribution to the treatment of neurosyphilis. The observations reported in other European clinics, as well as studies made in this country, afford good reason to believe that we have in malaria a therapeutic agent of great value in general paralysis. Therefore it becomes more important than ever to recognize and treat the disease in its earliest stages.

The Art of Medical Treatment With Reference Both to the Patient and to His Friends By Francis W Palfrey, M D, Visiting Physician, Boston City Hospital. Cloth Price, $4 50 net Pp 463. Philadelphia: W B Saunders Company, 1925

Dr. Palfrey has provided what is in every sense of the word a practical book, replete with suggestions as to the care of the patient The therapeutic directions are classified under the headings first thoughts, placing, the diet, remedial, supportive, palliative, minor care, nursing, information and preventive The material under the heading "information" usually appears in other books under prognosis, although in this instance the physician is even told carefully what he may tell the patient's friends The prescriptions are in practically every instance for pharmacopeial or well established products, and quite simple in their compounding. The rapid progress of our knowledge is responsible for several instances in which the book fails to mention methods of treatment that have been developed within the past year, particularly in tetany and scarlet fever. Following the discussion of treatment of various diseases are appendixes on the general topic of stimulation, bed-sores, communicable diseases, diet, duodenal intubation, blood transfusion, drugs, the treatment of metallic poisoning, and quackery and cults The last is a succinct statement of the medical attitude toward modern cult practices, with the conclusion that education of the public in medical matters and the progress of medicine must eventually dispose of these fallacies.

The Endocrine Organs: An Introduction to the Study of Internal Secretion Part II. The Pituitary; the Pineal; the Alimentary Canal; the Pancreas, and the Sex Glands By Sir E. Sharpey Schafer, LL.D, D Sc, M D Second edition Cloth Price, $7 Pp 177 418, with 117 illustrations New York Longmans, Green & Co, 1926

Continuing study of the glands of internal secretion is sufficient reason for new editions of some of the classic volumes in this field One of the best books for many years has been this by the professor of physiology in the Edinburgh University, which presents material from the scientific investigative aspects rather than from the empiric, clinical use of glandular extracts. The present volume is devoted largely to a consideration of work on the pituitary gland, with additional chapters on the pineal body, the pancreas and the sex glands. The literature has been combed thoroughly for material, but evidently the author has not been especially critical in his analysis of the things that he has read. As a work of reference to current literature, this volume may be especially recommended.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. *Selections will be made for more extensive review in the interests of our readers and as space permits.*

La Constipation: Comment l'eviter? Comment la guérir? Par Victor Pauchet, et H. Gaehlinger. Preface du Professeur P. Carnot. Paper. Price, 30 francs. Pp. 223, with 19 illustrations. Paris: Gaston Doin & Cie, 1926

Monograph concluding that constipation is an important condition which requires the best and most complete knowledge that physician and surgeon can give to it.

Lehrbuch der Gynäkologie für Studierende und Aerzte. Von Dr. Med. Robert Schröder, Ord Professor für Geburtshilfe und Gynäkologie und Direktor der Universitäts Frauenklinik in Kiel. Second edition. Paper. Price, 35 marks. Pp 725, with 333 illustrations. Leipsic. F. C. W. Vogel, 1926

Modern German gynecologic practice—elucidated with beautiful illustrations.

La gastroscopie: Etude clinique et experimentale Par le Docteur Jean Rachet. Travail du service de M. le Docteur Bensaude, médecin de l'hôpital Saint-Antoine. Paper. Price, 20 francs net. Pp. 117, with 46 illustrations. Paris: Gaston Doin & Cie, 1926

Monograph with bibliography concluding that the method merits more study.

L'Insuline Par Dr Emile Aubertin, Chef de clinique medicale a la Faculte de medecine de Bordeaux. Preface du Professeur agrégé P. Mauriac, Médecin des hopitaux Paper. Price, 45 francs net. Pp. 490. Paris: Gaston Doin & Cie, 1926.

French monograph with bibliography and summary of literature through 1925.

Precis de diététique et des maladies de la nutrition chez l'enfant et chez l'adulte Par Georges Mouriquand, Professeur à la Faculté de médecine de Lyon Cloth Price, 60 francs Pp 817, with 63 illustrations. Paris. Gaston Doin & Cie, 1926

Poorly printed French textbook of dietetics—general and not especially scientific or up to date.

Pathologische Histologie Ein Unterrichtskurs für Studierende und Aerzte Von Dr Max Borst, O. O Professor der allgemeinen Pathologie und der pathologischen Anatomie an der Universität München. Second edition. Paper. Price, 48 marks Pp 435, with illustrations Leipsic: F. C W. Vogel, 1926

Second edition of handsomely illustrated German textbook.

The International Medical Annual: A Year Book of Treatment and Practitioner's Index. Forty Fourth Year, 1926 Cloth. Price, $6 Pp 555, with illustrations New York: William Wood & Co, 1926.

British single volume alphabetical analysis in the nature of the American year book series.

Arabian Medicine and Its Influence on the Middle Ages. By Dr Donald Campbell Volumes I and II. Cloth Price, $8 per set Pp 442 New York: E P Dutton & Co., 1926

A learned and well written treatise prepared by the author under the tutelage of Charles Singer.

Das Thyreotoxikosesyndrom und seine Reaktion bei kleinen Joddosen. Von Johannes Wahlberg Paper. Pp 148, with illustrations Helsingfors: Mercators Tryckeri, 1926.

Study of use of iodine in disturbances of the thyroid, concluding that Plummer's views are right.

The Ethics of Business: A Study of Current Standards By Edgar L Heermance. Cloth Price, $2. Pp. 244. New York: Harper & Brothers, 1926

A general analysis of rules of life adopted by various trade and professional organizations

Abhandlungen aus der Kinderheilkunde und ihren Grenzgebieten. Herausgegeben von A Czerny. Heft 10 Experimentelle Untersuchungen über Darmbakterien Von Eugen Stransky, und Alfons Trias. Paper Price, 4 20 marks Pp 44 Berlin: S Karger, 1926.

Onderzoekingen Gedaan in het physiologisch Laboratorium der Rijksuniversiteit te Utrecht. Door H. Zwaardemaker. Series six, part six. Paper. Pp 164, with illustrations Utrecht: A. Oosthoek, 1926.

Arbejder fra Fodeafdeling og Gynekologisk Afdeling Rigshospitalet. Udgivet af S. A. Gammeltoft Vol. III. Paper. Pp. 252, with illustrations. Copenhagen: Levin & Munksgaard, 1926.

Historico da Protecção á Infancia no Brasil 1500 1922. Pelo Dr. Moncorvo Filho, Director fundador do Departamento Paper. Pp. 383. Rio de Janeiro: Paulo, Pongetti & C., 1926.

Medicolegal

Sleep and Negligence—Physician's Bills as Evidence

(Bushnell v. Bushnell (Conn.), 131 Atl. R. 432)

The Supreme Court of Errors of Connecticut says that this action was brought by a wife against her husband to recover damages for personal injuries alleged to have been caused by his negligence while they were riding together in an automobile which he was driving, when he momentarily fell asleep, with the result that the automobile ran off the highway and struck a tree, with consequent injury to the plaintiff, who was also asleep at the time of the accident. The court holds that, in Connecticut, with certain exceptions, a wife may maintain an action against her husband for personal injuries due to his negligence. Then came the question, which the trial court submitted to the jury, whether, in view of the circumstances preceding and surrounding the accident, the fact that the defendant momentarily fell asleep constituted negligence on his part; and it is held that the issue was rightly submitted to the jury, which rendered a verdict for the plaintiff.

There is surprisingly little authoritative discussion in decisions or textworks as to the relation of sleep to the doctrines of negligence, although in a number of cases it seems to have been assumed that it constitutes contributory negligence for one in a position of peril to become incapacitated by sleep from protecting himself from harm. That principle, however, did not quite reach to the situation here. While the condition of mind of the person doing harm is not to be regarded in determining liability within the proper field of the doctrines of negligence, yet those doctrines of necessity presuppose that the person whom it is sought to charge is capable of sense perceptions and judgment. On this basis, by the great weight of authority, the insane person, who is wholly irresponsible, is not chargeable with liability on the ground of negligence. Certainly in all reason he who, stricken by paralysis, or seized by an epileptic fit, still continues with his hands on the wheel of the automobile he was driving, and, unconscious, so directs it as to cause its collision with another, cannot be held negligent for the way in which he controlled it; and no more can he who exercises a like direction after he has been overtaken by sleep. In such a case the question must be, Was the defendant negligent in permitting himself to fall asleep? The defendant here argued that, granted this premise, then he could not be charged with negligence because no man can tell when sleep will fall on him. It is probably true that one cannot ordinarily fix with certainty on the precise moment when one lapses into unconsciousness, but it is not true that ordinarily sleep comes unheralded. Particularly would this be true where the onset of sleep is due to the prolonged action of a uniform excitant associated with little voluntary movement and a large degree of muscular relaxation, acting on one who has become more or less fatigued and is sitting down in a warm atmosphere. Sleep in such a situation does not come on one unawares, and, by watching for indications of its approach or heeding circumstances that are likely to bring it about, one may either ward it off or cease an activity capable of danger to himself or to others.

There are few ordinary agencies so fraught with danger to life and property as an automobile proceeding on the highway freed of the direction of a conscious mind, and, because this is so, reasonable care to avoid such a danger requires great care. In any ordinary case, one cannot go to sleep while driving an automobile withouting having relaxed the vigilance which the law requires, without having been negligent. It lies within his own control to keep awake or cease from driving. And so the mere fact of his going to sleep while driving is a proper basis for an inference of negligence sufficient to make out a prima facie case, and sufficient for a recovery, if no circumstances tending to excuse or justify his conduct are proved.

The defendant testified to having paid a hospital bill and a physician's bill, and a certain sum for a nurse for the plaintiff. He apparently paid them as charges for which he was himself directly and primarily obligated to respond. Such payments might have some value as corroborating testimony as to the seriousness of the plaintiff's injuries; and the bills, which were receipted, might, if otherwise unobjectionable, be placed in evidence to corroborate the defendant's testimony as to these payments. But so much of the physician's bill as briefly described the plaintiff's injuries was hearsay, and the bill ought not to have been admitted until those statements had been in some way erased from it. Where the plaintiff had incurred an obligation to a physician, his statement that perhaps an ordinary fee of from $200 to $300 might cover it was too loose for an award to the plaintiff.

Error of Court in Refusing to Wait for Physicians

(City of Harlan v. Howard (Ky.), 277 S. W. R. 847)

The Court of Appeals of Kentucky says that, in this action against the city to recover damages for personal injuries received by the plaintiff when a bridge fell which was maintained by the city as a part of one of its streets or public passways, the plaintiff, while testifying to a condition of pain and suffering in which she had been almost continuously since she was injured by the falling of the bridge, disclosed that for some eight or nine years before that occurrence she had been a sufferer from some nervous ailment or derangement. On a motion made by the defendant, and consented to by the attorneys for the plaintiff, the court appointed two physicians to make an examination of the plaintiff, during the noon recess of the court, to ascertain the nature and extent of her injuries, with direction to report and be in a position to testify on the convening of the court in the afternoon. The court was then adjourned to a fixed time, and when that time arrived and the court reconvened, the two physicians had not returned to the courtroom, and, over the defendant's objection, the court declined to wait further or to permit the physicians to be called, but immediately submitted the case to the jury. The court of appeals appreciates the congested condition of this trial court's docket, and commends all reasonable efforts to expedite the trial of cases. However, in view of the unsatisfactory condition of the evidence as to the extent of the plaintiff's injuries received as a result of the falling of the bridge, this court is constrained to the view that the trial court's summary submission of this case to the jury without giving the parties a reasonable opportunity to call the two physicians and introduce their testimony on that question was erroneous—an abuse of discretion for which the judgment obtained by the plaintiff must be reversed, and a new trial granted. Such pain and suffering as from her testimony she appeared to have endured, and was by her testimony attributed to the injuries received by her, as described by her, might have been as well attributed to the diseased condition of her nervous system of many years' standing.

Opinions of Physicians as to Insurance Companies

(New York Life Ins. Co. v. Long (Ky.), 277 S. W. R. 978)

The Court of Appeals of Kentucky says that in this action on a life insurance policy the defendant company denied liability on the ground that the representations contained in certain answers in the application for the insurance were material and false, and the question was presented as to whether or not the company, acting reasonably and naturally in accordance with the practice usual among life insurance companies, would have accepted the application and issued the policy sued on, if in answer to the questions the insured had stated the truth in accordance with the facts proved. It was insisted that under a previous opinion of this court none save those engaged for insurance companies in the actual business of passing on the desirability or nondesirability of insurance risks, and accepting or rejecting applications for insurance, were qualified to testify on the question involved here. But this court cannot agree with that contention. Three regularly licensed and practicing physicians of many years' standing testified for the plaintiff. It appeared that each of them had been a medical examiner for a number of life insurance companies, and in the course of his professional services along that line had had occasion to observe, and had observed, the custom and practice prevailing among life insurance companies generally in considering and taking action on applications for life insurance. It could not be said that they had not qualified themselves as experts in passing on the desirability of risks by those engaged in the life insurance business. Their professional work for life insurance companies in making medical examinations of applicants for insurance, extending over many years' time, peculiarly qualified them to know what risks were considered desirable and what undesirable by life insurance companies generally, and what the general custom of those engaged in the insurance business was with reference to the acceptance or rejection of applications under given states of cases. It cannot be held that they failed to qualify themselves as competent to testify.

Negligent Care of Sick Employee of Railway Company

(Baker et al. v. Adkins et al. (Texas), 278 S. W. R. 272)

The Court of Civil Appeals of Texas says that this action was brought against the receiver of the International & Great Northern Railway Company and against the company itself by Mrs. Adkins, on her own account and as administratrix in behalf of minor children, to recover damages for the death of Mr. Adkins, who, while an employee of the receiver, as a member of a bridge gang, was taken ill with smallpox. This court repudiates the barbarous doctrine that the master, if a railroad corporation, can ignore the cry of distress of the injured or sick employee, his illness or injury coming on him suddenly while serving the master. Certainly if the corporation assumes the duty of caring for the employee it must do so in a reasonably careful and competent manner, and if negligent cannot hide itself behind the cruel plea of such care being outside its chartered duties. This court commits itself to the theory that, even though a strict interpretation of the law as to the liability of the corporation master to the servant would permit it to turn aside in case of his sudden injury or sickness, while actively in its service, and refuse aid or assistance, still, if it should assume such care and assistance, to the exclusion of the family or other agencies, it will be held to the exercise of reasonable care in giving such aid, and if negligent it must respond in damages arising from such negligence. In this case the defendants assumed the responsibility of reasonable care in treating Mr. Adkins, and they must respond in damages for the failure to exercise such care. The decisions of a number of states sustain this proposition, and the death statute sustains a judgment for damages arising under the facts of this case.

The evidence in this case showed that not only did the receiver fail to notify the family or any one else of the condition of his employee, but assumed absolute and exclusive control of him, suffered him to lie in filth, exposed to the vilest insects and vermin, unwashed, with dirty, unclean bedclothing and untrained inefficient nursing, and, in addition, on several occasions, ran cars or locomotives against the car in which he was helplessly lying, and added to his discomfort and nervousness, and hastened his dissolution. No such negligence has ever been excused, or condoned through any technicalities, by any decision brought to the notice of this court. The grossest negligence was shown in the case of the sick man, and the receiver was responsible for the neglect and inexcusable carelessness and disregard for the comfort of the helpless patient.

The acts of negligence shown by the testimony and found by the jury were proximate causes of the death of Mr. Adkins. It was not necessary that these acts of negligence should be the sole cause of his death, but if they, together with smallpox, brought about the death, the defendants were liable. It did not matter who had provided the physician. The defendants had been guilty of negligence that contributed to the death of Mr. Adkins, and that was sufficient to fix liability. The question of who furnished the medical treatment was suggested by the defendants in conjunction with other suggested issues, and they were properly refused. The circumstances by which Mr. Adkins was surrounded were created by the receiver. The patient was in the hands of the receiver; he had assumed the care of the patient, and it was his duty to see that the sick man received proper medical treatment, and he could not shift his liability by the claim that some one else employed the physician. It was his duty to see that the physician was skilled and efficient.

This court does not think that a verdict in favor of the plaintiff, which amounted in the aggregate to $22,000, could be held as a matter of law to be excessive as to those entitled to recover.

Society Proceedings

COMING MEETINGS

Associated Anesthetists of the United States and Canada, Nottingham. England, July 20-23. Dr. F. H. McMechan, Avon Lake, Ohio, Sec'y.

Montana, Medical Association of, Billings, July 16-17. Dr. E. G. Balsam, 222 Hart-Albin Building, Billings, Secretary.

Wyoming State Medical Society, Lander, July 12-13. Dr. Earl Whedon, Sheridan, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS

Forty-First Annual Meeting, held at Atlantic City, N. J., May 4-5, 1926

(Concluded from page 2000)

Tertiary Syphilis of the Liver

Dr. Thomas McCrae, Philadelphia: One hundred cases are presented. The patients are mostly under 20, and all are congenital cases. The symptoms are fever, ascites and liver tumor, with marked enlargement of the left lobe. There is a large, domelike projection in the epigastrium. The prognosis is very bad. Two thirds of the cases are in males. The incidence is relatively high in colored persons, especially in colored women. The three outstanding complaints are loss of weight, swelling of the abdomen and pain in the abdomen. The histories give a description of periods of good health alternating with ill health. Ascites which clears up should always suggest syphilis of the liver. Examination is often difficult on account of the abdominal tenderness. Fever is present in 81 per cent, jaundice in 40 per cent and ascites in 42 per cent, and is usually very marked. The ascitic fluid gives a positive Wassermann reaction in 50 per cent; it is positive sometimes when the blood serum is negative. Splenic enlargement is present in 58 per cent of cases and is often very marked. Liver tumor is present in 89 per cent of cases. The left lobe of the liver is enlarged in more than 50 per cent. The prognosis is bad. Patients often died from other conditions, such as circulatory failure. There is a tendency to progress to cirrhosis with contraction. As to therapy, if the cases are discovered early and the proper treatment instituted, results are brilliant. The treatment is by mercury and iodides. No arsenical preparation should be given to patients with syphilis of the liver. There is great danger of toxemia with coma. With proper treatment there is no recurrence of symptoms.

DISCUSSION

Dr. Harlow Brooks, New York: The relief of pain following administration of iodides and mercury is very remarkable in these cases. We have had some experience of the bad effects of the administration of arsenic. There were three fatalities, but it is hard to teach the profession at large not to give arsenic in these cases; even good syphilologists are too ready to give arsenic.

Dr. W. S. Thayer, Baltimore: I have seen two cases of severe diphtheritic enteritis and colitis following the use of intravenous therapy which is so constantly done today. Without any proof of its usefulness, the custom continues, and the poisoning by its use is very frequent. There are many dangerous methods of treatment in popular use.

Dr. W. G. McCallum, Baltimore: I have seen a case in which the liver cells were practically destroyed following the use of arsphenamine. The extent of destruction attributable to arsphenamine treatment is devastating. We have analyzed cases of diphtheritic colitis following intravenous treatment by mercurial compounds and can emphasize what Dr. McCrae has said. The percentage of poisoning is enormously increased.

Dr. Charles F. Hoover, Cleveland: I agree with the attitude toward arsphenamine. I always treat a patient with syphilis with mercury. If the patient cannot stand mercury, I consent to employ arsphenamine.

Dr. Joseph Pratt, Boston: We have had fourteen cases of acute yellow atrophy, and two were due to therapeutic doses of arsphenamine.

Combined Diuretic Action of Certain Acid Salts and Organic Mercury Compounds

Dr. Norman M. Keith, Rochester, Minn.: We found that when using calcium chloride for edema it was difficult for the patients to take the salts. Therefore we tried ammonium chloride instead of calcium chloride. Certain cases are resistant to calcium chloride, and certain cases are resistant to ammonium chloride. Certain cases also are resistant to mercury salts. The condition of the stomach and the equilibrium of the ions in the body with regard to the drug have to be correct, or the drug cannot act. Study of the action of these substances points to the fact that they act regardless of differing pathologic conditions. They will act in the same individual at one time and not at another. When the chlorides are low in the blood, mercury compounds fail to produce diuresis. When there is diuresis, there is excretion of total and inorganic fixed bases, mostly sodium. We believe that the diuresis produced is constitutional rather than due to one single organ.

Use of Mixed Stock Vaccines in Pneumonia

Dr. Alexander Lambert, New York: Two hundred and twenty-one cases of pneumonia were treated with mixed stock vaccines during the same time that other patients were treated with pneumonia antibodies, and with pneumonia serum. There were also for comparison 286 control cases of pneumonia in which no specific treatment was given, and the patients were sick simultaneously in the wards. The vaccine used was a mixed stock vaccine sterilized without heat, containing 1 million bacteria to the cubic centimeter. It contains 200 million of Pfeiffer's influenza bacillus, 100 million pneumococcus, 100 million streptococcus, 200 million *Micrococcus catarrhalis,* and 200 million each of *Staphylococcus aureus* and *Staphylococcus albus.* There are 160 different strains of these different bacteria in this vaccine, including forty different strains of the four different types of pneumococcus. The dosage given has been from 1 to 2 cc., usually 1.5 cc., intramuscularly, every six hours as long as the temperature was above 99 F., and when the temperature fell to 99 F., the dose was cut every twelve hours for one or two doses, and then to once in twenty-four hours for one or two days, and the vaccine treatment ceased. The effect of vaccines in pneumonia differs greatly, according to whether they are given early or late in the disease. Transportation also has detrimental effect on hospital patients. Therefore treatment of these cases is put to the severest kind of test. Besides the specific vaccine treatment, these patients have been given digitalis or whatever cardiac stimulation was necessary, or needful medication for troublesome bronchitis. Mortality in the vaccine treated cases was 21.2 per cent, compared to 40.5 per cent in the controls. Six of the vaccine treated patients and sixteen of the control cases came in moribund. Subtracting these deaths, it leaves 19 per cent in favor of the vaccine cases, against 37 per cent in the controls. The mortality rate is lower in the vaccine treated patients, the earlier it is administered. If given within forty-eight hours, the mortality rate is 5.8 per cent; if in the first seventy-two hours, 9.8; after the first seventy-two hours, the mortality in the vaccine treated cases and the control cases was nearly the same. The great advantage of vaccines lies in early treatment and has no relation to type of pneumococcus. In the controls the death rate was higher in types 2 and 3. Clinically, the effect of the vaccines has been distinctly that of diminishing the severity of the disease, rather than shortening its course, or other effect. No febrile reaction followed the use of these vaccines. After the vaccine dosage, there was diminution in temperature, in pulse frequency and rapidity of respirations, compared with the controls. The advantage of vaccines, compared with other specific treatments of pneumonia, has been that there is no protein reaction following their use, no rise in temperature and dangers resulting therefrom. There is no anaphylactic reaction and no limitation to any special type of pneumococcus. They are easily obtainable and are readily available by the profession. They must, however, be used early in the disease, in sufficient amounts, and sufficiently often in each twenty-four hours to be effective.

Contagion of Tuberculosis

Drs. Eugene L. Opie and Maurice F. McPhedran, Baltimore: We have endeavored to distinguish latent tuberculosis from manifest tuberculosis. The difference between the two is very uncertain. The study has been made on families in which tuberculosis occurred, compared with those in which no tuberculosis occurred. One hundred families were studied in 1924, and 250 in 1925. Roentgen-ray studies were used, and the quantitative intradermal tuberculin test was made. We have recognized lesions having the characteristic tuberculosis of childhood, and other types resembling active disease. In ten families there was tuberculosis either latent or evident in both husband and wife. Forty-seven per cent of cases occurred in the children, showing high contact incidence. The tuberculin reaction in the contact and noncontact families was 100 per cent at 20 years. Up to 5 years of age, it was 80 per cent in contact family children and 20 per cent in noncontact families. There was a high incidence of tracheal and bronchial lymph node infection.

Function of the Tissues in Immunity

Dr. Frederick P. Gay, San Francisco: Back of all immunity lie the cells. We cannot prove that antitoxin is formed in the cells of the central nervous system. The work on opsonins suggested that antibodies do not act directly, but by affecting bacteria; thus there is a tertium quid. Why, for instance, does a typhoid recovered case remain immune? There must be some change in the cells of the body. What are the phagocytic properties of other cells of the body? We have studied local immunity and we feel that the skin or pleura may be immune and the rest of the body remain unprotected. The local condition, however, may be related to conditions not strictly local in their nature. I do not think protection is due entirely to increase in the number of cells. When the right pleural cavity is infected, there is immunity produced also in the left pleural cavity. There is a metaplasia of cells along the muscle bundles to the other side of the body, which gives protection when these cells are present.

Studies on the Herpes Encephalitis Questions

Dr. Hans Zinsser, Boston: It was supposed at one time that the virus of herpes and of encephalitis were identical. I do not believe that these viruses are identical.

Bacteriology of Lobar Pneumonia

Drs. Russell L. Cecil, Horace S. Baldwin and Nils P. Larsen, New York: Two thousand cases of pneumonia have been typed by us. Bronchopneumonias were not included in this series. Ninety-five per cent were pneumococcus infections, of all four types: type I, 33 per cent; type II, 19 per cent; type III, 13 per cent; type IV, 33 per cent. The incidence of mixed infection increased with the type; thus, type I showed 18.4 per cent mixed infection; type II, 23 per cent; type III, 23 per cent; type IV, 31 per cent. In regard to age, types II and IV do not vary much as to age of patients. Type I shows high incidence in the early decades; type III has low incidence in early life, and high incidence in elderly persons. In regard to sex, types I and II are common in males; types III and IV in women. Men under 50 show many cases of types I and II; women over 50, of types III and IV. Type IV occurs oftener in pneumonia secondary to bronchitis and influenza. Type III has a high incidence in persons with systemic disease, and among the insane. In fatal cases blood cultures ran 62 per cent positive. With sterile blood cultures, there were 18 per cent fatal cases. Complications are twice as common in type I as in other types. If empyema occurred before the seventh day, 90 per cent of the patients died.

Current Medical Literature

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

31: 603-761 (May) 1926

*Prevention of Rickets: Influence of Routine Administration of Cod Liver Oil. M. G. Wilson, New York.—p. 603.
*Etiology and Healing Process of Duodenal Ulcer in Melena Neonatorum. R. L. J. Kennedy, Rochester, Minn.—p. 631.
*Osteomalacia in Children: Mineral Metabolism. H. L. Dwyer and O. S. Eckelberry, Kansas City, Mo.—p. 639.
*Chylothorax in New-Born Infant: Case. C. A. Stewart and H. P. Linner, Minneapolis.—p. 654.
*Recurrent Vomiting. H. Josephs, Baltimore.—p. 657.
*Influence of Acidified Milk on Duodenal Function in Infants. L. Arnold, Chicago.—p. 668.
*Goiter in Children in New York City. F. Cohen, New York.—p. 676.
Kidney: Filter for Bacteria. VI. Effect of Ureteral Obstruction on Excretion of Bacteria. H. F. Helmholz and R. S. Field, Rochester, Minn.—p. 693.
Flatfoot in Infants and Children. P. Lewin, Chicago.—p. 704.

Influence of Routine Administration of Cod Liver Oil in Prevention of Rickets.—A study made by Wilson of infants, aged from 1 to 3 months, born in the spring and summer of 1924, receiving graduated doses of from one-half to one and one-half teaspoonfuls of a biologically tested cod liver oil, revealed the development of clinical rickets in 91 per cent of the subjects. A more intensive study of forty-seven infants, aged from 2 weeks, born in the winter of 1925, receiving daily doses of one, two and three teaspoonfuls of biologically tested cod liver oil, showed the development of clinical rickets in 68 per cent of the cases, as compared with 76 per cent of the control series of thirty cases. Ninety-seven per cent of infants born in the summer, and 91 per cent of infants born in the winter, who received cod liver oil, showed roentgenographic evidence of rickets. Ninety-seven per cent of the infants born in the summer, and 98 per cent of infants born in the winter who did not receive cod liver oil, showed roentgenographic evidence of rickets. Rickets was observed earlier by roentgen ray than by clinical examination, being observed in 4 per cent at 1 month and in 23 per cent at 2 months of age, compared with a total of 4 per cent at 2 months by clinical examination alone. By the fourth month, rickets was present in the majority of infants of both groups. The early age incidence of the development of rickets observed indicates the necessity for measures of prevention or control to be instituted in the first month, particularly for babies in winter. The correlation of the clinical and roentgenographic evidence of rickets observed at the various age periods in this investigation indicated that active rickets is encountered most frequently in the first six months of life, and healing rickets after six months. There did not seem to be any relation between the degree of rickets observed and the amount of cod liver oil received. Infants receiving cod liver oil showed rickets that healed earlier than that of the control series. The nature of the relation of cod liver oil therapy to the development of rickets, as observed in these studies, would seem to be one of control rather than of prevention.

Duodenal Ulcer in Melena Neonatorum.—Kennedy states that careful search will reveal peptic ulcer in a larger number of cases of melena neonatorum. In three cases studied, streptococci or diplococci were demonstrated in the tissues of the ulcers. It is believed that these must be the chief etiologic agents. Healing of duodenal ulcers begins very early and proceeds rapidly, so that, under proper conditions, the injury may be entirely repaired in a few days, an additional reason why they are so difficult to find. The rapidity of the healing of duodenal ulcer probably accounts for many of the recoveries from melena neonatorum.

Mineral Metabolism in Osteomalacia.—Two cases of osteomalacia occurring in children are reported by Dwyer and Eckelberry. Studies on the mineral metabolism indicate that there is a lowered retention of calcium, magnesium and phosphorus. In one patient, the calcium loss reached a negative balance.

Chylothorax in New-Born Infant.—A fatal case of chylothorax in an infant, aged 4 days, due apparently to a rupture of the thoracic duct, is reported by Stewart and Linner. In the amounts given, the oral administration of sudan III failed to stain the fat droplets in the chylous fluid. The golden yellow color of the chylous fluid present the first few days apparently was due to lactochrome (carotin, largely) derived from the colostrum the baby obtained at the breast. Following the injection of sterile congo red into the peritoneal cavity, the dye appeared in the chylous fluid in the pleural sac.

Hypoglycemia and Recurrent Vomiting.—Some, and in all probability a large, proportion of the attacks of recurrent vomiting, Josephs says, are characterized by hypoglycemia, which develops rapidly and in some instances may reach a considerable degree. The rapidity with which hypoglycemia develops at the beginning of a fast is made the basis of a test for recurrent vomiting, which can readily be applied between attacks. The mechanism of the hypoglycemia is discussed, as well as the part played by anesthesia, fever and other conditions, in initiating an attack of the disease.

Influence of Acidified Milk on Duodenal Function.—The use of buttermilk, lactic acid milk, protein milk and such mixtures, Arnold states, influences duodenal function more than it does gastric function. The amount of actual hydrolysis of protein due to peptic activity in the infant's stomach is unknown. The evidence at present available substantiates the conception of gastric function in the baby as being an important chemical mechanism, as it maintains a constant duodenal and jejunal reaction that allows the physiologic process of control of the bacterial flora of this region of the intestinal tract.

Goiter in New York Children.—The more important and suggestive points discussed by Cohen and disclosed by a survey of 11,084 school girls and 783 school boys in New York City are as follows: The incidence of simple goiter in school children and in the older group of women, and the investigation into the conditions of iodine intake which determine endemic centers of goiter, do not justify a conclusion that New York City is an endemic center of goiter. The mild sporadic cases of simple goiter which occur among school children seem to be dependent on a relative insufficiency of iodine, due mainly to a physiologic cause; namely, puberty. Thyroid enlargements occur in New York City about three times more frequently in girls than in boys. Simple goiter among children in New York City reaches its peak at puberty, between the ages of 13 and 15, in both girls and boys. The percentage of incidence of normal glands seems to vary inversely with the degree of activity of the menstrual cycle. The mild cases of simple adolescent goiter observed among children in New York City seem to show, in the case of girls, a distinct tendency to spontaneous regression after puberty; in that of boys, a complete regression.

American Journal of Medical Sciences, Philadelphia

171: 469-624 (April) 1926

Advancement of Epidemiology Through Experiment. S. Flexner, New York.—p. 469.
*Mode of Death in Various Types of Heart Disease. F. A. Willius, Rochester, Minn.—p. 480.
*Intermittent Auricular Ventricular Block. H. W. Dana and W. Dameshek, Boston.—p. 485.
*Cerebral Manifestations of Paroxysmal Tachycardia. A. R. Barnes, Rochester, Minn.—p. 489.
*Cause of Essential Hypotension. A. E. Fossier, New Orleans.—p. 496.
*Splanchnic Dyspepsia: Gastro-Intestinal Syndrome of Circulatory Origin. W. J. Mallory, Washington, D. C.—p. 504.
*Acute Perforation of Gastric and Duodenal Ulcer: Sixty-Two Cases. K. A. Meyer and W. A. Brams, Chicago.—p. 510.
*Sprue in Temperate Zone. G. L. Lambright, Cleveland.—p. 515.
*Interstitial Gland Cells in Human Ovary. B. D. Lewin, Ward's Island, N. Y.—p. 518.
*Pain in Cancer of Breast: Clinical Significance. S. Ginsburg, New York.—p. 520.
Cancer. III. W. Meyer, New York.—p. 535.

Cancer. IV. W. Meyer, New York.—p. 543.
*Spinal Cord Tumor Occurring Without Pain or Sensory Change. R. L. Glass, Ann Arbor, Mich.—p. 552.
*Typhoid Abscess of Breast. P. O. Snoke and J. L. Goforth, Philadelphia.—p. 555.
*Calcium Content of Blood in Gout and Arthritis. P. Horowitz, New York.—p. 560.
Hypertrophy, Congenital, of Left Shoulder Girdle, Arm and Hand, with Nevus and Varicose Veins. E. G. Wakefield, Washington, D. C.—p. 569.
*Blood-Serum Calcium in Sprue and Other Pathologic States in Tropics. B. K. Ashford and L. G. Hernández, San Juan, P. R.—p. 575.

Mode of Death in Heart Disease.—In a review made by Willius of 330 cases in which death occurred as the direct result of cardiac disease, clinically or pathologically determined, the types were as follows: (1) Arteriosclerotic cardiac disease, 25 per cent; (2) myocardial infarction, 11 per cent; (3) hypertensive cardiac disease, 12 per cent; (4) cardiac hypertrophy associated with obesity, 0.6 per cent; (5) acute myocarditis, 0.3 per cent; (6) cardiac failure from mechanical causes, 0.6 per cent; (7) chronic endocardial valvular disease, 28 per cent; (8) bacterial endocarditis, 9 per cent; (9) pericardial disease, 5 per cent; (10) cardiovascular syphilis, 8 per cent; (11) congenital cardiac disease, 1 per cent. Sudden death occurred in 125 cases, while death from gradual cardiac failure occurred in 205 cases. Embolic phenomena occurred in fifty-eight cases. Necropsy was performed in 85 per cent of the cases reported.

Intermittent Auricular Ventricular Block.—A case of transient 2 to 1 auricular ventricular block, apparently due to right bundle branch defect, is reported by Dana and Dameshek. The transition from a period of 2 to 1 block to a period of normal rhythm, as recorded by the polygraph, was perfectly smooth and unbroken, giving no evidence of a change in mechanism, nor any definite explanation for the presence of the abnormal rhythm. It is believed that alternation between normal conduction and auricular ventricular block is possible only when the P-R interval (*a-c* interval) is practically within normal limits; that is, when the delay in conduction between auricle and ventricle is not in itself sufficient to account for the blocking of the auricular impulse.

Cerebral Manifestations of Paroxysmal Tachycardia.—Cerebral manifestations, consisting of vertigo, hemianopsia, temporary blindness, fainting, falling, with or without loss of consciousness, and epileptiform seizures, occurred in fifteen of 104 cases of paroxysmal tachycardia studied by Barnes. The presence of these symptoms requires that paroxysmal tachycardia be considered. Cerebral manifestations in attacks of paroxysmal tachycardia occurred most frequently in cases in which the origin of the impulse and its propagation in the heart varied the greatest from normal. The presence of these manifestations does not affect the prognosis in attacks of paroxysmal tachycardia. The prognosis depends on the type and degree of the underlying cardiac injury.

Cause of Essential Hypotension.—All hypotheses heretofore advanced as to the etiology of essential hypotension, Fossier says, have been either unproved, refuted or impractical. Its characteristic symptomatology is commonly found in the asthenic or splanchnoptotic patient, and only very rarely, if ever, in hypersthenia. The low blood pressure is raised by the treatment of splanchnoptosis; i. e., abdominal support, the strengthening of the abdominal muscles and the increase of the intra-abdominal fat. The use of organotherapy has proved unsuccessful in correcting the hypotension. It is encountered in patients having an elongation of the ascending aorta, a narrowing of its hemicircle, and a heart poorly supported by the diaphragm (drop heart). It answers the hydraulic principles, the longer the pipe and the smaller the radius of the bend, the smaller will be the final velocity energy; or in men, the longer the ascending aorta, the narrower the diameter of the aortic arch, the heart pressure being equal, the lower the systolic blood pressure.

Splanchnic Dyspepsia.—Mallory describes a group of symptoms, often referred to as "indigestion," due, not to disturbance of the digestive function, but to disorder of the circulation. The relief experienced after a laxative or enema is attributed to an evacuation of the bowel, but this, Mallory says, is erroneous, because relief occurs before the evacuation, and the symptoms return within a few hours, before stasis could recur. The real character of the syndrome is indicated by vasomotor disturbance, imbalance of the sympathetic nervous system and a low Crampton's index. Remedies should be directed to restoring the tone of the circulatory mechanism, and not to the digestive organs.

Acute Perforation of Peptic Ulcer.—In a series of sixty-two consecutive cases of acute perforation of gastric and duodenal ulcer, proved at operation, every patient was a male. Meyer and Brams suggest that this observation may be of value in the diagnosis of surgical emergencies of the abdomen. Sixty per cent of the patients were under 40, and 32 per cent were 30 years old or younger. Overdistention of the stomach by food or unusual exertion had comparatively little to do with actual rupture. Perforation occurred during sleep in five patients. The clinical picture in the early stages was clear cut, so that a correct diagnosis was made in 85 per cent of the cases before operation. The clinical features are obscured later in the course by the resulting peritonitis and meteorism. The location of the maximum pain and tenderness was then often in the right lower quadrant of the abdomen instead of in the epigastrium. The presence of free air in the peritoneal cavity on fluoroscopic examination proved of great help in the diagnosis both in the early and later stages of perforation. Vomiting always occurred after the onset of the pain, and was present in all but six cases, but in no case was hematemesis present. This series showed no marked difference in the mortality rate of gastric and duodenal ulcer. The total death rate was about 29 per cent and rose rapidly with delay before operation.

Sprue in Temperate Zone.—Lambright reports a case of sprue developed in this climate in a patient at the age of 16, producing the typical symptoms and blood changes characteristic of sprue, and even suggested pernicious anemia. *Monilia psilosis* was found in the stool. Motility disturbances in the small intestines were present as an underlying predisposing factor in the infection. Evidence of blood destruction was found in the presence of urobilin and bile in the urine.

Interstitial Gland Cells in Ovary.—Among forty-three pairs of ovaries from psychotic cases examined by Lewin, two ovaries, each from a different case, showed in the hilum a small island of cells identical in appearance with the interstitial gland cells of the testis. The clinical diagnosis in both cases was "senile psychosis." No functional features were to be correlated with this finding. If the cells exerted a "male" influence, the fewness of their number, or the presence of general senility, prevented this influence from manifesting itself. The possibility of overlooking the presence of such an island, when the ovary is removed in the usual routine necropsy manner, is pointed out.

Significance of Pain in Breast Cancer.—Ginsburg asserts that extramammary pain in breast cancer most frequently spells cancerous skeletal metastases. Whenever a patient with breast cancer, preoperatively or postoperatively, with or without local recurrence, with or without demonstrable visceral metastases, complains of pain for which no adequate or obvious benign cause can be found, one must think of skeletal metastases. Frequent and repeated roentgenologic examination of the skeleton for bone metastases should be carried out. As a corollary, prophylactic postoperative irradiation in breast carcinoma ought to include not only the breast region, but also a judicious raying of the skeleton, with special reference to the most frequent sites of bone invasion.

Spinal Cord Tumor Without Pain.—The tumor in Glass' case was an extradural endothelioma psammomatosum, lying external to the dura, and extending from between the fifth and sixth cervical vertebrae to between the first and second thoracic vertebrae, and lay both posterior and to the left of the cord. That part of the tumor which had grown about the left margin of the cord completely surrounded three nerve roots at their points of issuance from the dura. Neither spinal roots nor cord were particularly flattened.

Typhoid Abscess of Breast.—Snoke and Goforth report a case of proved typhoid abscess of the breast occurring one year after lactation. It was preceded by three postlactation masses, perhaps periductal adenofibromas, which may have afforded foci for the localization of the typhoid bacilli. Enlarged masses in the axillary fold proved to be periductal adenofibromas, presumably of misplaced mammary tissue. The differential diagnosis from tuberculosis or neoplasm could not be made before the breast was amputated.

Blood Calcium in Gout and Arthritis.—In five out of fourteen cases of arthritis deformans, a high blood-calcium concentration was found by Horowitz. In the nine remaining cases, the calcium was within normal limits. Cases of acute gout showed a high calcium concentration. In chronic gout, the blood calcium was found to be within normal limits. In a case of arthritis complicated with an otosclerosis and in others complicated with chronic nephritis, a hypocalcemia was present. In agreement with other investigators, the author found that the blood calcium in diabetes was normal or slightly above normal.

Blood Calcium in Sprue.—Low total serum calcium values, according to Ashford and Hernández, are not pathognomonic of sprue, or of any other special disease they have so far seen. They are probably the indirect results of nutritional unbalance. The marasmus of sprue is notorious. No disease furnishes a higher percentage of "living skeletons," but there is still to be explained the fact that in more than one half of the severe and cachectic cases there is a normal *total* serum calcium. There seems to be, as a rule, a real and positive rise in serum calcium after the intramuscular injection of parathyroid extract. This rise must be only temporary, however, as may be faintly shadowed by the disparity between rises after a month and those after a day or so following injection. On the other hand, some old cases of sprue have attained a normal calcium with diet alone, even with *Monilia* vaccines alone, but always only in conjunction with improved nutrition, by improved digestion and restoration of digestive glandular efficiency. Of the 101 cases of nutritional unbalance reported by the authors, cultures were made from the feces in thirty-eight cases and two were positive for *Monilia psilosis*, while of the fifty-five cases of sprue, thirty-five were positive for *Monilia psilosis*. Thirteen are as yet unclassified but positive for *Monilia* of doubtful species, and six are negative for all fungi. The feces of 178 supposedly healthy boys were cultured and in seven *Monilia psilosis* was found.

American Journal of Obstetrics and Gynecology, St. Louis

11: 439-582 (April) 1926

Radium Treatment of Carcinoma Uteri. G. G. Ward and L. K. P. Farrar, New York.—p. 439.
Precancerous Lesions of Uterus. P. Findley, Omaha.—p. 450.
Cervicitis, Erosion and Laceration of Cervix Uteri from Standpoint of Pathology. G. L. Moench, New York.—p. 453.
Endometrial Adenoma (Implantation) in Vermiform Appendix. M. G. Seelig, St. Louis.—p. 461.
Extrameatal Prolapse of Urethra: Case with Acute Onset. W. T. Dannreuther, New York.—p. 468.
Weight Estimates During Pregnancy and Puerperium. W. Kerwin, St. Louis.—p. 473.
Injuries of Infant During Delivery. P. B. Bland, Philadelphia.—p. 477.
Vulvovaginitis in Infants and Young Children. P. F. Williams, Philadelphia.—p. 487.
Duodenal Ulcer from Partial Obstruction at Duodenojejunal Junction. E. P. Sloan, Bloomington, Ill.—p. 492.
*Possible Cause for Pemphigus Neonatorum. R. E. Krigbaum, Columbus, Ohio.—p. 494.
Method of Obtaining Vaginal Secretion for Bacteriologic Examination Without Possibility of Vulval Contamination. J. W. Harris and J. H. Brown, Baltimore.—p. 497.
Spontaneous Rupture of Uterus in Labor Following Sturmdorf Tracheloplasty. N. J. Estman, Peking, China.—p. 500.
*Intraperitoneal Hemorrhage Complicating Abortion. W. L. Downing, Le Mars, Iowa.—p. 503.
*Supernumerary Breast Near Labium. J. W. Bell, Minneapolis.—p. 507.
Case of Gangrene of Cecum in New-Born Infant. L. A. Wing, New York.—p. 510.
Case of True Ovarian Pregnancy. J. R. Manley, Duluth, Minn.—p. 512.

Liquor Cresolis Compositus Causes Pemphigus Neonatorum.—Krigbaum associates the use of liquor cresolis compositus with the occurrence of pemphigus neonatorum. He thinks that there is a strong possibility that the irritating alkaline solution is at times the cause of pemphigus. Therefore, no liquor cresolis compositus which has not been titrated to determine its free alkalinity should be used in delivery rooms or nurseries in such a way that it might come in contact with babies' skins; second, that one cannot eradicate an epidemic of pemphigus by changing the solutions in the delivery room or nursery without resorting to the usual methods of isolation and prevention, because, when an epidemic is once started, the mild staphylococcus increases in virulence as a result of its rapid transmission from one host to another, to such an extent that it becomes capable of infecting a normal nonirritated baby; third, as a precaution against the common form of impetigo, young children should be prohibited from visiting new-born babies during their confinement to the hospital.

Intraperitoneal Hemorrhage Complicating Abortion.—In the case cited by Downing, an intra-uterine implantation was present, the pregnancy having reached approximately the eighth week. A spontaneous abortion then took place, complicated by a localized acute inflammation in the left tube. Hemorrhage into the peritoneal cavity also occurred.

Supernumerary Breast Near Labium.—Bell's patient, aged 59, multipara, had a mass about the size of an egg attached just in front of the left labium majus by a pedicle 3 cm. in diameter. The mass was of variable consistency, quite elastic and was not attached to the skin, which slid over it easily. It was removed. The microscopic appearance of the specimen was that of a resting breast with cystic disease present.

American Review of Tuberculosis, Baltimore

13: 293-391 (April) 1926

*Effects of Atmospheres Rich in Oxygen on Normal Rabbits and Rabbits with Pulmonary Tuberculosis. A. L. Barach, New York.—p. 293.
*Gastric Function in Pulmonary Tuberculosis. D. Perla, New York.—p. 317.
*Importance of Timely Radical Local Rest (Thoracoplasty) in Pulmonary Tuberculosis. J. L. Dubrow, Denver.—p. 327.
*Healed Generalized Miliary Tuberculosis. P. H. Pierson, San Francisco.—p. 342.
*Acute Tuberculous Lymphadenitis Complicating Pulmonary Tuberculosis. A. S. Lathrop, Wallingford, Conn.—p. 350.
*Cutaneous (Moro) Tuberculin Test in Artificial Pneumothorax Patients. H. F. Gammons, Booneville, Ark.—p. 357.
Reticulum of Lung: Rôle in Healing of Miliary Tubercles. W. S. Miller, Madison, Wis.—p. 360.
*Influence of Winter Climate on Pulmonary Tuberculosis in United States. J. R. Miner, Baltimore.—p. 366.
*Inherited Immunity in Tuberculosis. H. G. Carter, Burkeville, Va.—p. 373.
*Resistance to Tuberculous Infection of Guinea-Pigs Rendered Skin Sensitive with Dead Tubercle Bacilli. L. Dienes and E. W. Schoenheit, Asheville, N. C.—p. 379.

Effects of Oxygen on Pulmonary Tuberculosis.—Experiments were carried out by Barach, which indicated that the inhalation of atmospheres containing 60 per cent oxygen exercises no specific retarding influence on the development of experimental pulmonary tuberculosis. The use of oxygen in pulmonary tuberculosis has no specific curative value. When dyspnea or cyanosis is present, the inhalation of oxygen is of benefit, as it is in other acute respiratory disturbances; namely, by relieving dyspnea, decreasing pulmonary ventilation and by averting the harmful effects of anoxemia.

Gastric Function in Pulmonary Tuberculosis.—The gastric contents of 198 tuberculosis patients were analyzed by Perla, with these results: Pulmonary tuberculosis is generally accompanied by a diminution of acidity of the gastric juice. The decrease in hydrochloric acid bears no definite relation to the anatomic extent of the disease, although anacidity occurs more frequently in active bilateral far advanced lesions. Although the presence of fever is not necessarily accompanied by a diminished hydrochloric acid secretion, marked hypochlorhydria is more frequent in patients with constitutional symptoms than in those free from them. Heartburn and sour eructations are far more frequently associated with hypochlorhydria than with hyperchlorhydria. Distention, anorexia, belching and constipation are, however, the more common symptoms associated with hypo-acidity. All cases of emetic cough show marked hypo-acidity. The absence of free hydrochloric acid may occur in cases without any gastro-intestinal complaints. A normal J-shaped orthotonic type of stomach is found in the majority of cases of pulmonary tuberculosis uncomplicated by intestinal lesions. In cases associated with gastroptosis, impairment of gastric function is not necessarily present. The position of the stomach does not contribute to the hypochlorhydria so often found in cases of pulmonary tuberculosis. In pulmonary tuberculosis associated with hypo-acidity, large doses of dilute hydrochloric acid afford, in the presence of disturbing digestive complaints, immediate symptomatic relief, and contributes to the general improvement of the patient.

Local Rest in Pulmonary Tuberculosis.—The efficacy of artificial pneumothorax in carefully selected cases is stressed by Dubrow as being a timely radical local rest in pulmonary tuberculosis, especially for the cases that are now seen in the sanatorium in greater numbers in the advanced stages and have often been neglected by the man in the field before admission or by the ultraconservative physician in the sanatorium.

Healed Generalized Miliary Tuberculosis.—A generalized miliary tuberculosis, involving at least the lungs, the lymph nodes and skin, and probably the liver and spleen and possibly the kidneys, which healed by absorption of the process rather than by calcification, is reported by Pierson.

Tuberculous Lymphadenitis Complicating Pulmonary Tuberculosis.—Three cases of acute tuberculous lymphadenitis complicating pulmonary tuberculosis are presented by Lathrop. In two of the cases the adenitis involved only the cervical nodes on one side; in the third case all palpable lymph nodes were involved. In none of the cases was the prognosis definitely altered by the presence of the complication.

Cutaneous Tuberculin Test in Pneumothorax Cases.—The value of the Moro skin test in the selection of pneumothorax patients was studied by Gammons in nine cases. Those patients with negative reaction before artificial pneumothorax was begun showed a negative reaction during and after the treatment. Those in whom the skin test was positive before treatment showed a more marked reaction after the lung was compressed. The negative skin-test patients have died or are expected to die, while the positive skin-test patients give all hopes of getting practically well.

Influence of Winter Climate on Pulmonary Tuberculosis.—Miner found the white death-rate from pulmonary tuberculosis in the United States registration states to be higher in those states with a mean January temperature between 30 and 40 F. than in colder or warmer regions. Possible factors affecting this result are discussed. No evidence is found to support the view that severe winter climates, or poor ventilation resulting from them, are important factors in the etiology of tuberculosis.

Inherited Immunity in Tuberculosis.—In a comparison and study of some 5,000 white patients and 1,700 colored patients treated under the same conditions, Carter found results obtained in the whites persistently better than results shown for the colored. Results shown in the mulatto negro are better than those shown in the black, but not so good as results in the white. The average age of those treated is greatest in the white and least in the black, while the mulatto occupies a middle ground. The same is true of the average age at death; namely, highest in the white and lowest in the black. The greatest incidence of tuberculosis under 30 years of age is found in the black, next in the mulatto and least in the white. More than 30, this order is reversed. Carter's conclusions are that this better resistance in both is due to an inherited immunity from ancestry that has accumulated that immunity through contact with tuberculosis. The white race transmitting to the mulatto a part of a stronger immunity accumulated through longer contact, this transmitted immunity plus that acquired by the mulatto gives him a better resistance to tuberculosis than the black, whose immunity has been accumulated entirely by him since being in contact with civilization, and almost entirely in the last seventy-five years, since freedom has thrown him in contact with crowded centers of population.

Experimental Resistance to Tuberculosis.—Intracardial injections of killed tubercle bacilli were practically without effect in producing skin sensitiveness in guinea-pigs. Guinea-pigs rendered tuberculin-sensitive by intracutaneous or subcutaneous injections of killed tubercle bacilli were not more resistant to infection than the control animals.

Archives of Dermatology and Syphilology, Chicago

13: 601-736 (May) 1926

Diseases of Oral Mucosa. J. A. Fordyce and G. M. MacKee, New York.—p. 601.

Superficial Yeast Infections of Skin and Its Appendages. B. B. Beeson and J. G. Church, Chicago.—p. 643.

Roentgen-Ray Treatment of Verruca Plantaris. J. C. Michael, Houston, Texas.—p. 658.

Dermatophytid: Complicating Dermatophytosis of Glabrous Skin. C. M. Williams, New York.—p. 661.

*Cultures from Skin of Apparently Normal Feet. T. Cornbleet, St. Louis.—p. 670.

*Association of Intestinal Indigestion with Various Dermatoses. H. J. Schwartz, New York—p. 672.

Multiple Sarcoid-Like Granulomas of Skin of Undetermined Nature. J. V. Klauder and F. D. Weidman, Philadelphia.—p. 675.

Cultures of Apparently Normal Feet.—Three out of 100 cultures made by Cornbleet from the fourth interdigital space of apparently normal feet yielded cultures of pathogenic fungi. The weight of present evidence is in favor of the pathogenicity of the fungi under consideration.

Association of Intestinal Indigestion and Dermatoses.—Basing his opinion on an analysis of more than 900 feces, Schwartz asserts that intestinal toxemia is an important etiologic factor in the production of many dermatoses, especially those of the inflammatory type.

Archives of Neurology and Psychiatry, Chicago

15: 537-673 (May) 1926

*Sensory Disturbances in Multiple Sclerosis: Their Significance in Diagnosis. O. Sittig, Prague, Czechoslovakia.—p. 537.

*Development of Meninges. S. C. Harvey and H. S. Burr, New Haven, Conn.—p. 545.

Vascular Lesions and Tumors of Brain: Difficulties in Differential Diagnosis. J. H. Globus and I. Strauss, New York.—p. 568.

Studies of Casts of Cerebral Ventricles. C. E. Locke, Jr., Cleveland.—p. 588.

Constant Relation Between Postures of Motile and Rigid States. W. M. Kraus, New York.—p. 597.

Radix Spinalis Trigemini and Principle of Usurpation. W. Freeman, Washington, D. C.—p. 607.

*Neurologic Symptoms in Osteitis Deformans (Paget's Disease). D. Gregg, Wellesley, Mass.—p. 613.

Sensory Disturbances in Multiple Sclerosis.—Not only are disturbances of sensibility of various kinds in multiple sclerosis frequent, but it appears that there is scarcely a case in which they do not occur. In four cases of the series of fourteen reported by Sittig, severe pains were manifest from time to time. In one, the disease began with sciatica on one side; in another, during the later course of the disease, severe pains appeared in an upper arm; in a third case, the disease began with severe rheumatoid pains in one side of the thorax and in the shoulders (in that case, there were also circumscribed pains between the thumb and first finger of one hand and in the outer side of the other thumb); in one case, neuralgia-like pains were felt in the shoulder.

Development of Meninges.—Harvey and Burr assert that the view of His and Kölliker, supported by Salvi, Sterzi, Weed and others, that the pachymeninx and the leptomeninx have a common origin in a primitive mesenchyme derived from a specific germ layer, the mesoderm, is incorrect. Certain ectodermal elements derived in large part from the neural crest are contributed to the mesenchyme and take part in the formation of the leptomeninx. These facts have been demonstrated experimentally in *Amblyostoma* and are confirmed by observations in the chick and pig embryo. Such origin suggests that the cells of the leptomeninx may have certain characteristics of their own, apparent in their reaction to injury and in the neoplasms arising from them.

Neurologic Symptoms in Osteitis Deformans.—Gregg holds the view that osteitis deformans is not rare. Long before the stage of gross deformity, it gives rise to neurologic symptoms such as pain and interference with the function of the nerves crowded by the proliferating bony structures. Osteitis deformans should be regarded as possible until ruled out by satisfactory roentgenologic examination in cases of pathologic fracture, neuritis or neuralgia of undetermined origin, and nerve disability. Early and definite diagnosis can be made by roentgenologic examination.

Boston Medical and Surgical Journal

194: 809 868 (May 6) 1926

*Coronary Occlusion in General Practice. S F. McKeen, Brookline—p 809.
*Liver Function VI Quantitative Methods for Determining Cholesterol and Alcohol Soluble and Insoluble Bile Pigments of Duodenal Contents C W McClure, Boston, and M. E Huntsinger, Boston—p 812
Massachusetts Tuberculosis League, 1925 1926 K Emerson, Worcester.—p. 814.
Broadening of Tuberculosis Program L R. Williams, Albany, N Y.—p 816
Measures to Combat High Mortality from Tuberculosis Between Fifteen and Forty Four E O Otis, Boston—p 821
Expansion of Activities of Tuberculosis Associations G. H. Bigelow, Boston—p 823
Tuberculosis and Industry McI Woody, Springfield—p 825
*Plan for Control of Contagious Diseases W. A Lane, Milton—p 827.
Progress in Study and Treatment of Cardiovascular Disease in 1925. T D Jones, University, Va, and H B. Sprague, Boston—p 828

Coronary Occlusion.—McKeen contends that coronary occlusion is not a rare disease in general practice. The diagnosis is generally easy, the treatment is plainly indicated, and the prognosis is fairly hopeful From the standpoint of treatment, it is highly important to distinguish it from the different acute affections of the upper abdominal quadrant, and from those doubtful conditions often described in the newspapers as "acute indigestion" and "ptomaine poisoning" The picture of a typical case should be kept clearly in mind A man in about middle life is suddenly stricken, perhaps in his sleep, with an intense substernal or epigastric pain that lasts and is not relieved by nitrites or even by ordinary doses of morphine Signs of grave shock are present, anxious facies, ashy color, clammy skin and rapid, feeble pulse. The heart sounds may be irregular or ticktack in quality. A pericardial rub is sometimes found, and is then pathognomonic The blood pressure is comparatively low, and, if previous readings are known, a decided drop has evidently occurred The temperature will probably be found elevated, and the leukocytes are increased A patient with such symptoms should be put to bed, and made as comfortable as possible with opiates. If the insult to the heart is not too great, he may survive the immediate shock If he is kept absolutely quiet in bed for at least six weeks, with good nursing care, the infarct is given the best chance to heal, and the patient the best chance to recover. Moreover, if he has been a sufferer from chronic angina and hypertension, he may be relieved from both by his coronary occlusion

Estimating Bile Pigments in Duodenal Contents.—McClure and Huntsinger describe two new methods for quantitating substances present in the bile fraction of duodenal contents One of the methods relates to the determination of cholesterol and the other to a bile pigment.

Control of Contagious Disease.—Lane advocates uniformity of control, uniformity in certificates, uniformity of rules and methods of procedure as a means of lessening the spread of contagion

Journal of Biological Chemistry, Baltimore

68: 1 223 (April) 1926

*Glutose Biochemical Behavior. E M Benedict, H D Dakin and R West, New York—p 1
*Minimum Endogenous Nitrogen Metabolism M Smith, Boston—p 15
Distribution of Unsaturated Fatty Acids in Tissues I Beef Heart Muscle W. R Bloor, Rochester, N Y—p 33
*Tetany P Drucker and F Faber, Copenhagen—p 57.
Quantitative Study of Storage of Vitamin A H C. Sherman and M L Cammack, New York—p 69
Comparison of Viscometric, Copper Reduction, Polariscopic, and Iodometric Methods for Measuring Rate of Hydrolysis of Starch and Dextrin by Aspergillus Oryzae H L. Maslow and W C Davison, Baltimore—p 75
Effect of Hydrogen Ion Concentration on Starch Liquefying Activity of Amylase of Aspergillus Oryzae. H L Maslow and W C Davison, Baltimore—p 83
Effect of Hydrogen Ion Concentration on Dextrin Liquefying Activity of Dextrinase of Aspergillus Oryzae. H L Maslow and W C Davison, Baltimore—p 95
Is Cyanic Acid Intermediate Product of Action of Urease on Urea? J B Sumner Ithaca, N Y.—p 101.
Adsorption of Nitrogen by Hemoglobin J B Conant and N D. Scott, Cambridge, Mass—p 107
*Determination of Uric Acid in Blood H Brown, Philadelphia—p 123
Enzyme Action. XXXIV Actions of Some Ester Hydrolyzing Enzymes at Different Temperatures H M Noyes, I. Lorberblatt and K. G. Falk, New York—p 135
Forms of Lactic Acid Produced by Pure and Mixed Cultures of Bacteria C S Pederson and E. B. Fred, Madison, Wis—p 151.
Does Addition of Sodium Chloride Increase Value of Corn Ration for Growing Animals? H. H. Mitchell and G G Carman, Urbana, Ill—p 165
Biologic Value of Nitrogen of Mixtures of Patent White Flour and Animal Foods H H. Mitchell and G G. Carman, Urbana, Ill—p. 183
Alleged Interchangeability of Arginine and Histidine in Metabolism. W. C Rose and G J Cox, Urbana, Ill—p 217.

Glutose.—Glutose, a nonfermentable ketohexose, obtained by the regulated action of alkali on glucose or fructose, has been investigated by Benedict, Dakin and West. The tolerance for glutose in the human organism is very low. With moderate doses it is excreted unchanged in the urine and by the bowel. The excretion of glucose in human diabetes was not influenced by the administration of glutose. Ketosis was variably affected by glutose. The respiratory quotient in man is not changed after glutose consumption. Insulin shock is not influenced by glutose. Methods for the preparation and estimation of glutose are described

Endogenous Nitrogen Metabolism.—Smith endeavored to determine the absolute minimum total nitrogen excretion in the urine which could be attained in a normal adult whose caloric requirements were supplied in excess by carbohydrate and fat only. As small a quantity of protein as possible, without making the diet intolerable, was given. It was desired to prove that such a diet could be prolonged without harm to the subject. This expectation was fulfilled for a period of twenty-four days The subject was in negative nitrogen balance throughout the experiment. The total nitrogen lost in the twenty-four days was 80.08 Gm; the average daily loss was 3.34 Gm

Tetany.—Drucker and Faber assert that infantile tetany cannot be explained by an "alkalosis" of the blood, since neither the p_H values are more alkaline nor the alkali reserve greater when the tetany is manifest than when it is cured. The theory that hypocalcemia, and hence tetany, is due to a change in the blood reaction in an alkaline direction cannot, therefore, be substantiated.

Determination of Uric Acid in Blood.—A direct method for determining uric acid in blood is described by Brown. The technic is simplified by permitting the uric acid reaction to take place at room temperature and thus eliminating heating in the water bath. Turbidity formation is greatly delayed, making possible the simultaneous determination of a larger number of bloods. Results are obtained which are nearer those of the Folin-Wu technic and, therefore, its use does not make necessary a new conception of higher "normal" uric acid values.

Journal of Bone and Joint Surgery, Boston

8: 247-458 (April) 1926

Training and Activities of Orthopedic Surgeon. R. Jones, Liverpool.—p 247.
So Called Infraction of Second Metatarsal Bone. A H Freiberg, Cincinnati.—p 257.
*March Foot. M Jansen, Leiden, Holland—p 262
Fractures of Femur in Children W A Clark, Pasadena, Calif.—p 273
*Renal Rickets G V. Ashcroft, Manchester, England—p 279.
*Artificial Limbs: Relation to Different Types of Amputation Stumps A B LeMesurier, Toronto—p 292
*Mechanical Employment of Sequestrum Fracture of Femur. F. H. Albee, New York—p 325
*Theory as to Cause of Perthes' Disease Based on Roentgenologic Findings J M Berry, Albany, N Y—p 333
*Danger in Use of Lipiodol in Diagnosis of Obstructive Lesions of Spinal Canal W Sharpe and C A Peterson, New York.—p 348.
Classification of Arthritis C F Painter, Boston—p 354
Pott's Disease A Rollier, Leysin, Switzerland—p 360.
*Infective Arthritides A M Forbes, Montreal—p 374
*Spontaneous Fracture Following Bone Banding for Fractures C. C. Carr, Lexington, Ky—p 377
*Tendon Transplantations for Division of Extensor Tendon of Fingers. L Mayer, New York.—p 383
*Disinfection of Septic Joints. F J Cotton, Boston—p 395
*Nonsuppurative Osteomyelitis M Harbin Cleveland—p. 401.
*Congenital Malposition of Left Fibula G E Bennett, Baltimore—p 405.
Anterior Tarsectomy (Ollier) in Tuberculosis of Anterior Tarsus. E S. Geist, Minneapolis—p 410.
Traction Loop for Foot. J. L. Porter, Evanston, Ill—p 414.

Apparatus for Correction of Flexion Contracture of Knee. W. C. Campbell, Memphis, Tenn., and J. M. Mitchner, Houston, Texas.—p. 416.
Simple Removable Head Suspension Sling. P. Lewin, Chicago.—p. 422.
Clubfoot Wrench. D. R. Telson, New York.—p. 425.
St. Luke's Fracture Bed. R. L. Dresel, San Francisco.—p. 427.

March Foot.—March foot is the well known edematous swelling of the metatarsal region of the foot, which presents itself in persons who are made to walk beyond their strength. Jansen asserts that march foot is due to overfatigue in a weak foot, which causes spasm of the interosseous muscles, stasis of blood and lymph, swelling of the flexible parts, thickening of the periosteum, brittleness of the bone tissue of the metatarsals, and eventually, also fracture. March foot is to the midfoot what spastic flatfoot is to the lower leg. It is antepes contractus or spastic midfoot.

Renal Rickets.—Renal rickets is a condition in which bone deformity of the late rickets type is associated with renal disease. An investigation made by Ashcroft of this type of case has shown that 33 per cent have definite renal inefficiency, and 54 per cent reveal some renal defect. Sufficient evidence has been found to warrant the suggestion that the disease may be due to a fibrosis of the suprarenal gland.

Artificial Limbs.—The efficiency of any amputation stump is essentially the efficiency of that stump when fitted with an artificial limb; hence, LeMesurier says, every amputation should be done with the idea of leaving the stump that is most suitable for the particular type of limb that is eventually to be worn. The different kinds of artificial limbs, made by the Department of Soldiers' Civil Re-Establishment of Canada, are described by LeMesurier, who has been in charge of the limb-fitting clinic for five years.

Sequestrum Fracture of Femur.—Albee reports a case in which a sequestrum, 4½ inches (11.5 cm.) long and comprising nearly the entire thickness of the femur, was used as an extending influence in the restoration of the limb to increased length in a case of compound comminuted fracture with overriding, complicated by osteomyelitis. Furthermore, the case is a striking example of a large number of cases in which the quadriceps muscle has become fixed to the anterior lower surface of the shaft of the femur and thus either prevented flexion of the knee or seriously limited it, in which instance it is possible by plastic surgery to overcome this disabling affliction by extensive separation, by dissection, and by the implantation of a fascial and fat graft.

Cause of Perthes' Disease.—Berry advances the theory that Perthes' disease is due to defective epiphyseal tissue plus trauma and that trauma alone, if severe enough, may cause the disease.

Lipiodol in Spinal Theca Aggravates Symptoms.—It has been noted by Sharpe and Peterson that the presence of lipiodol in the spinal theca has resulted in the aggravation of clinical symptoms and signs. They urge caution regarding its use, especially as an early, routine, and confirmatory method of diagnosis. The fact that it is apparently nonabsorbable is in itself a potential danger.

Infective Arthritides.—Forbes is of the opinion that the intestinal tract is the probable source or portal of infection in the majority of cases of this disease.

Metal Bands on Bone Cause Fracture.—Garr calls attention to the fact that the metal bands used in the open reduction and fixation of fractures frequently lead to spontaneous fracture; hence, they should always be removed within a month, for by that time simple fixation will be sufficient and the nutrition of the bone will not be seriously impaired.

Tenoplasty on Extensors of Fingers.—Mayer asserts that traumatic division of the extensor tendons in which primary suture of the extensor tendons is contraindicated because of infection or extensive trauma to adjacent tissues can be treated successfully by tendon transplantation performed under suitable operative conditions. The extensor communis digitorum tendon of the index finger is the most suitable for transplantation purposes.

Disinfection of Septic Joints.—Cotton again describes his method of treating septic joints by incision, drainage and disinfection with physiologic sodium chloride solution with 1:15,000 mercuric chloride. On the basis of his excellent results, he urges the more widespread adoption of this method.

Nonsuppurative Osteomyelitis.—Harbin reports a case of nonsuppurative sclerosing osteomyelitis of the os calcis, in which there was involvement of the body of the bone together with the epiphysis.

Congenital Malposition of Left Fibula.—In Bennett's case, the lower end of the fibula was posterior and internal to the astragalus. There was also marked malformation of the astragalus. The fibula was dissected free and a transverse osteotomy done. The lower end of the fibula was removed. The astragalus and the internal malleolus were remodeled to bring the astragalus into a better position; the fibula was then transplanted to its normal position and fixed in this position by means of a living suture made of a strip of fascia lata, passing directly through the tibia and looping around the fibula, holding it in a good position with a very satisfactory anchorage. The patient made an uneventful recovery, and is able to bear a moderate amount of weight on the foot.

New York State Journal of Medicine, New York

26: 375-416 (May 1) 1926

*Survey of Tetanus and Treatment. M. Nicoll, Jr., Albany.—p. 379.
*Morbidity in Obstetrics Reduced by Use of Mercurochrome as Vaginal Antiseptic. H. W. Mayes, New York.—p. 384.
Case of Papilloma of Bladder. F. E. Dubois, New York.—p. 388.
Measles Year. C. Herrman, New York.—p. 390.
Legal Relation of Necropsy. K. S. Kennard, New York.—p. 390.
Differential Diagnosis of Pain in Right Lower Qradrant of Abdomen. H. A. Blaisdell, Jamestown.—p. 395.

Tetanus in New York.—Nicoll asserts that deaths from tetanus in the state of New York from 1907-1925 were only one-third the number that occurred eighteen years ago. This is attributed to no other cause than the more general use of tetanus antitoxin as a preventive. The fact that tetanus occasionally occurs after a single preventive dose of antitoxin strongly suggests the advisability of repeating the dose one or more times in all severe and extensive wounds, and possibly the advisability of administering twice the standard preventive dose at the first inoculation. An analysis of 262 cases of tetanus, in which the method of treatment is known, fails to show greater value of the intraspinal method over the intravenous alone or in combination. There seems to be some indication of the value of massive doses of antitoxin.

Mercurochrome as Vaginal Antiseptic.—According to data furnished by Mayes, the morbidity from childbirth has been reduced over 50 per cent by the use of a 4 per cent solution of mercurochrome as a vaginal antiseptic during labor and delivery. Vaginal cultures following the use of mercurochrome are sometimes negative for twenty-four or forty-eight hours and then show positive growths. The mercurochrome, although not actually destroying all the bacteria, has inhibited their growth for a period of time sufficient for them to be washed from the vagina by the lochia or absorbed by the maternal tissues. Repeated vaginal instillations have had no noticeable effect on either the mother or the baby. Mayes is convinced that if the use of mercurochrome were made compulsory before all vaginal examinations or instrumentations, the same as is now required for the prevention of ophthalmia neonatorum, there would be a drop in the annual death rate from puerperal fever.

Rhode Island Medical Journal, Providence

9: 65-82 (May) 1926

Infected Kidney. C. L. Deming, New Haven, Conn.—p. 65.
Measles Immunization. H. P. B. Jordon, Providence.—p. 71.

Tennessee State Medical Association Journal, Nashville

18: 281-308 (Feb.) 1926

Extra-Uterine Pregnancy. L. L. Sheddan, Knoxville.—p. 281.
Stricture of Ureter as Cause of Intractable Bladder Symptoms. G. R. Livermore, Memphis.—p. 288.
Plea for Education of Deaf Child. P. M. Farrington, Memphis.—p. 291.
Charity Clinics. R. B. Wood, Knoxville.—p. 295.
Indications for Simple and Radical Mastoid Operations. S. Lawwill, Chattanooga.—p. 298.
Undescended Testes. J. W. McClaren, Jackson.—p. 303.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 815 854 (May 8 and 15) 1926

*Principles Involved in Prophylaxis and Therapy by Means of Vaccines. J C G Ledingham —p 815
*Control of Heart Disease in Childhood M F Lowenfeld —p 817
*Action of Intestinal Extracts W. E Dixon and J. H Wadia —p 820
*Two Cases of Huntington's Chorea A F Grimbly and I G H Wilson —p 820
*Influence of Vermiform Appendix on Gynecologic Surgery R S Statham —p 821.
*Radical Treatment of Trigeminal Neuralgia B Hughes —p 823
*Carcinoma After Gastro Enterostomy D R Owen —p 825
*Fatal Hemorrhage from Liver in Infant Five Days' Old J A Berry —p 826
*Recovery from Tubal Deafness Caused by Sarcoma. S Lodge and W O Lodge —p 826
*Congenital Occlusion of Duodenum A V Magee —p 826
Spontaneous Reduction of Acute Intussusception D J Davies —p 827.
Cystic Degeneration of Uterine Fibroid with Partial Extrusion W Fdmond —p 827

Vaccine Therapy Empiric Practice.—The importance of the nonspecific element in vaccine therapy in its purely curative aspect is emphasized by Ledingham without ignoring the possible benefits that may accrue from repeated vaccine administration with a view to prophylaxis He says that, though vaccines have been exploited in treatment for more than twenty years, the accumulated clinical data as to their efficacy or otherwise have not yet supplied that decisive link in the evidence which would raise vaccine therapy from the level of a purely empiric practice Any scientific basis on which specific vaccine therapy may rest has not been enlarged and built on by decisive experiment on man or animals, and the consequence has been that vaccine therapy continues on its hapless way, exploiting now this now that, purely technical modification, but really in no way consolidating its position as the form of specific therapy which it has been believed to be

Control of Heart Disease in Childhood.—Lowenfeld relates the activities of the children's heart clinic at the Royal Hospital for sick children at Glasgow since its institution in 1923 He says that any attempt to control the rheumatic infection in childhood must include provision for the acute, the convalescent, and the quiescent stages of the disease, and that, by the establishment of a clinic of the kind described, rheumatism in the children supervised can be controlled, and the incidence of carditis reduced to a minimum In it an instrument of research is provided for increasing knowledge of the heart of the child and its response to the rheumatic toxin, and the correlation of records obtained in such clinics would throw very valuable light on the nature of the disease A cardiac classification is proposed as a suitable basis for correlation

Action of Intestinal Extracts.—Dixon and Wadia have prepared insulin from the intestinal mucous membrane of pigs by the Dudley method The amount is considerably greater than that suggested by Ivy and Fisher The authors do not offer information as to why this insulin body comes out in boiled intestinal extracts and not in other tissue extracts They think, however, that the evidence suggests that pituitary secretion following the injection of intestinal extract is of the same nature as that which obtains after the injection of insulin

Familial Huntington's Chorea.—The points that appear to be of interest in connection with the two fatal cases of Huntington's chorea occurring in two brothers reported by Grimbly and Wilson are 1 The existence of a family history of insanity transmitted through the mother, three sons becoming insane, and two of these developing Huntington's chorea 2 The difference in the early history of the two brothers subsequently affected with chorea One had never been capable of regular employment; the other had a long record of army service prior to and during the first half of the war The younger brother had a history of syphilis contracted abroad during military service in 1906, and his case was diagnosed, on admission, as general paralysis of the insane. The same brother exhibited no choreic movements at the time of his admission; whereas the other showed unmistakable evidence of chorea from the first. Regarding the difference in the age factor, the younger brother, who had led an active life, developed the disease at 34, while the older, who had spent the major part of his existence under institutional control, exhibited no symptoms until he was 43 As regards the morbid anatomy, both cases exhibited thickening of the pia-arachnoid, local atrophy in the frontal and frontoparietal areas, generalized cerebral and cerebellar softening, and a pronounced increase of cerebrospinal fluid with dilatation of the ventricles. In the case in which it was possible to carry out a detailed examination under the microscope, the pathologic changes consisted of chronic leptomeningitis, small round cell infiltration of the perivascular lymphatics, particularly definite in the caudate nucleus, and increased vascularity in the thalamus, but without any definite focus of acute encephalitis. There was also some degeneration of pyramidal cells, especially in the precentral gyrus

Appendix and Gynecologic Disease.—Statham suggests that the appendix should be suspected and examined in all cases of pelvic peritonitis, and it should be removed if it is in any way diseased, to prevent further trouble at a later date. Even when the operation is performed for a condition that is not inflammatory, the appendix should be examined Acute pyosalpinx is frequently complicated by acute appendicitis and vice versa "Oophoritis" as a disease, and apart from pelvic peritonitis, should not be diagnosed. If at operation the ovaries are found to be merely enlarged and not adherent, then the appendix is most likely to be the cause of the patient's pelvic pain In corroboration of this, the number of oophorectomies performed at the Royal Infirmary has fallen to a fourth of the number that were done before the war, and the results as to the cure of chronic pain have very greatly improved Statham avers that it is just as well to remove a pelvic appendix whenever found, even if it appears quite healthy to the eye

Treatment of Trigeminal Neuralgia.—In Hughes' opinion, section of the second and third divisions of the trifacial nerve is the operation of choice, as there have been no recurrences after four and five years, which rather supports the theory that the condition is sympathetic in origin, and that the afferent cell stations are situated in the sympathetic ganglions An attempt should be made to save the motor element of the third division. Postoperative infection of the respiratory annexes and trophic changes in the mucosa have been conspicuous by their absence. Hughes asserts that the radical cure is correct both scientifically and practically, and is undoubtedly preferable to alcohol injection, which is but palliative and temporary.

Carcinoma Following Gastro-Enterostomy.—Owen reports a case of carcinoma following a gastro-enterostomy for ulcer, in which all the evidence appears to be against the theory that the ulcer, or ulceration around the gastro-enterostomy, was the cause of the carcinoma.

Fatal Liver Hemorrhage in Infant.—In Berry's case the source of the hemorrhage was a laceration of the anterior surface of the liver which probably occurred during birth, although the fact of labor having been easy and normal makes it rather difficult to understand how it occurred

Sarcoma of Soft Palate Causes Deafness.—The case reported by Lodge and Lodge was one of removal from the soft palate of a sarcoma which resembled clinically the type of endothelioma found in this situation. As a result of relief of pressure on the eustachian tube, the patient recovered from unilateral deafness of eight years' standing.

Congenital Occlusion of Duodenum.—The first part of the duodenum in Magee's patient ended in a dilated, dome shaped diverticulum The occluded end was firmly connected by a strong fibrous band to the head of the pancreas. The remainder of the duodenum (second and third parts) began, at the upper end, as a bulbous dilatation, into which, almost at right angles, ran the common bile duct A firm, nodular mass in the wall of the intestine near the entrance of the duct proved, on histologic examination, to be a mass of lymphoid tissue. A band, composed entirely of fibrous tissue, stretched from the occluded end of the first part of the duodenum to the head of the pancreas. Midway in its course it enveloped the bile duct and the remainder of the duodenum. The pancreatic duct, although not traced, did not enter the intestine in the region of the bile duct. The remaining organs in the body appeared normal.

Indian Medical Research Memoirs, Calcutta

4: 1-288 (Feb.) 1926

Study of Parasite of Indian Kala-Azar in Culture. S. R. Christophers, H. E. Shortt and P. J. Barraud.—p. 19.
Temperature in Relation to Culture of Herpetomonas Donovani on NNN Medium. S. R. Christophers, H. E. Shortt and P. J. Barraud. —p. 55.
Effect of Salt Solutions of Different Concentrations on Parasite of Indian Kala-Azar. S. R. Christophers, H. E. Shortt and P. J. Barraud. —p. 61.
Systemic Infection of Monkey (Macacus Rhesus) by Intradermal Inoculation of Spleen Puncture Material from Case of Indian Kala-Azar. H. E. Shortt and C. S. Swaminath.—p. 67.
Infection of Monkey (Macacus Rhesus) with Parasite of Indian Kala-Azar. E. D. W. Greig and S. R. Christophers.—p. 69.
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Result of Feeding Mice with Cultures of Herpetomonas Donovani. S. R. Christophers, H. E. Shortt and P. J. Barraud.—p. 89.
Can Bedbug Transmit Indian Kala-Azar? H. E. Shortt and C. S. Swaminath.—p. 105.
Culicoides and Kala-Azar in Assam. S. R. Christophers, H. E. Shortt and P. J. Barraud.—p. 111.
Herpetomonas Found in Gut of Sandfly (Phlebotomus Argentipes), Fed on Kala-Azar Patients. R. Knowles, L. E. Napier and R. O. A. Smith. —p. 113.
Development of Parasite of Indian Kala-Azar in Sandfly. S. R. Christophers, H. E. Shortt and P. J. Barraud.—p. 123.
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Feeding of Sandflies on Cases of Kala-Azar in Calcutta. L. E. Napier and R. O. A. Smith.—p. 147.
Feeding of Larvae of Sandflies on Cultures of Leishmania Donovani. S. R. Christophers, H. E. Shortt and P. J. Barraud.—p. 155.
Massive Infection of Pharynx of Sandfly with Herpetomonas Donovani. H. E. Shortt, P. J. Barraud and A. C. Chaighead.—p. 157.
Study of Bionomics of Sandfly in Calcutta. L. E. Napier and R. O. A. Smith.—p. 161.
Technic Employed in Breeding Sandfly in Assam. S. R. Christophers, H. E. Shortt and P. J. Barraud.—p. 173.
Anatomy of Sandfly. I. Head and Mouth Parts of Imago. S. R. Christophers, H. E. Shortt and P. J. Barraud.—p. 177.
Bodo Phlebotomi (Herpetomonas Phlebotomi) (Mackie, 1914). H. E. Shortt.—p. 205.
Sandfly Survey of Madras Town. P. J. Barraud.—p. 207.
Transmission of Kala-Azar in India. L. E. Napier.—p. 219.
Incidence of Kala-Azar on Pusa Estate. D. F. Michael.—p. 267.
Incidence of Kala-Azar in Parts of North Behar. D. F. Michael. —p. 277.
Kala-Azar in Ramnad District of Madras Presidency. T. S. Balasubramanian.—p. 287.

Journal of Laryngology and Otology, Edinburgh

41: 277-348 (May) 1926

Peroral Endoscopy: Historical Survey. I. Moore.—p. 277.
*Treatment of Cold by Homeopathic Doses of Iodine. D. M'Kenzie.—p. 299.
Simple Method of Determining the Counter-Rolling of Human Eye. C. E. Benjamins.—p. 300.
Prognosis of Middle Ear Suppuration in Children: Review of Five Hundred Cases. D. Guthrie.—p. 305.
Case of Double Vestibulotomy. H. Law and G. Bewley.—p. 316.
Surgical Emphysema of Head and Neck Following Esophagoscopy. H. L. Whale.—p. 320.

Iodine Treatment of "Cold."—In the treatment of acute nasal catarrh, M'Kenzie made use of a mixture consisting of 1 per cent pure iodine dissolved in water to which a little potassium iodide has been added to aid solution. Of this, 1 minim only (1/100 grain iodine), well diluted with water, is taken once in twenty-four hours. The effect, particularly if the first dose is taken in the early hours of the attack, is said to be prompt.

Journal of Physiology, London

61: 151-304 (April 23) 1926

Impulses Produced by Sensory Nerve Endings. E. D. Adrian and Y. Zotterman.—p. 151.
Action of Ions on Intra-Auricular Conduction in Tortoise. A. Seliskar. —p. 172.
Vasodilator Action of Histamine: Physiologic Significance. J. H. Burn and H. H. Dale.—p. 185.
Central and Reflex Regulation of Heart Rate. G. V. Anrep and H. N. Segall.—p. 215.
Method of Measuring Directly Total and Partial Pressures of Gases in Blood. E. P. Poulton, W. R. Spurrell and E. C. Warner.—p. 232.
Method for Study of Perfused Pancreas. B. P. Babkin and E. H. Starling.—p. 245.
Normal Carbon Dioxide and Oxygen Tensions in Tissues of Various Animals. J. A. Campbell.—p. 248.
Analysis of Initial Heat Production in Voluntary Muscle of Tortoise. W. Hartree.—p. 255.
Reaction to Drugs of Strips of Rabbit's Gastric Musculature. G. L. Brown and B. A. McSwiney.—p. 261.
Cardiovascular Reflexes. I. D. Daly and E. B. Verney.—p. 268.
Physiology of Plain Muscle. R. J. Brocklehurst.—p. 275.
Histamine Shock. O. Inchley.—p. 282.
Action of Alcohol on Conduction in Auricle of Tortoise. A. Seliskar. —p. 294.
Influence of Hydrogen Ion Concentration and of Anoxemia on Heart Volume. H. Gremels and E. H. Starling.—p. 297.

Journal of Tropical Medicine and Hygiene, London

8: 117-130 (April 15) 1926

*Whittingham (W) Strain of Artificially Induced Malaria. A. R. Grant and J. D. Silverston.—p. 117.
Vaccinia Variolae. M. Coplans.—p. 122.

Artificially Induced Malaria.—Grant and Silverston draw attention to some of the characteristics and behavior of a strain of malaria (Whittingham) which has now reached the fourth year of its existence and which still retains all its former potency and therapeutic value. In 1922, a patient with general paralysis was inoculated with blood from a patient who had contracted benign tertian malaria in India. From this host, a long chain of cases of general paralysis and tabes has been infected, with the result that during the last forty-two months the strain has been transmitted by direct subcutaneous inoculation through sixty generations, comprising more than 150 cases.

Lancet, London

1: 961-1020 (May 22) 1926

*Medical Aspects of Tobacco. H. Rolleston.—p. 961.
*Treatment of Cholecystitis and Prevention of Gallstones. A. F. Hurst. —p. 966.
Common Difficulties in Labor Met with in General Practice. H. R. Andrews.—p. 970.
*Use of Silver Filigree in Inguinal Hernia. P. P. Cole.—p. 974.
Toxic (Subdural) Meningeal Hemorrhage. A. G. Banks and A. M. N. Pringle.—p. 975.
*Unusual Cases of Puerperal Fever. R. Swyer.—p. 976.
Widespread Secondary Growths from Vulval Cancer. A. E. Chisholm. —p. 977.

Medical Aspects of Tobacco.—Rolleston reviews the history of tobacco smoking, the comparative effects of pipes, cigars and cigarets. The question of the addiction of tobacco smoking; the therapeutic uses of tobacco smoking; its bad effects on the nervous system; tobacco amblyopia; effects on the heart, blood pressure, alimentary canal and respiratory tract.

Prevention of Gallstone Formation.—The recognition and treatment of cholecystitis, Hurst says, is the best prophylaxis of gallstones. As it is impossible to tell when a gallstone is beginning to form, it is wise to give all patients with active cholecystitis a diet poor in cholesterol. In addition to cream and the yolk of eggs, brain, liver, sweetbread, kidneys and roe should be avoided, and all forms of animal fat should be taken in strict moderation. As many of the patients are obese, this diet has the further advantage of helping them to lose weight. If, however, the patient is thin, olive oil should be given before meals, especially if hyperchlorhydria is present, as it inhibits the flow of gastric juice.

Silver Filigree in Inguinal Hernia.—Cole has used a silver filigree in sixty cases of inguinal hernia, and has never had occasion to remove the filigree in any case.

Puerperal Fever with High Apyrexial Pulse Rate.—One of Swyer's patients developed a thrombosis of the inferior vena cava. A striking feature of the case was a persistently high pulse rate even during apyrexial periods, varying between 92 and 140 with an average of about 116. This patient died. The second case was one of very severe infection of the blood with a hemolytic streptococcus in which all the local lesions were confined to the right side of the body. The patient recovered.

Bulletin de l'Académie de Médecine, Paris

95: 425 447 (May 4) 1926

Test for Beta Oxybutyric Acid in Diabetic Urine. H Bierry and Gabriel Moquet —p 432.
*Surgery in Ovaritis J. Lhermitte and R. Dupont.—p. 435.
*Filtrable Tubercle Bacillus in Vaccination A. Vaudremer.—p 440

Surgery in Sclerous plus Cystic Ovary.—Lhermitte and Dupont emphasize the association of pronounced nerve lesions in sclerotic and cystic degeneration of the ovary—"sclerocystic ovaritis." Partial resection of the gland cannot induce a permanent cure, since the appearance of new cysts as well as the surgical scars seem rather to favor recurrence. The only logical treatment is by severing the ovarian nerves: this appears to be the radical cure for this affection. They have applied this denervation of the ovary recently in nine cases; the results so far are encouraging.

Development of Filtrable Tubercle Bacillus and Vaccination Against Tuberculosis.—Vaudremer cultivated the tubercle bacillus in various mediums and temperatures. His research showed that the tuberculosis germ may develop in the form of a mycelium, outside of parasitic life. Certain elements of this mycelium pass through the filter, presenting isolated granules, which may grow even in unfavorable mediums and retain their pathogenic property. By passage through animals, the nonacid-resisting forms of the germ develop into the common tubercle bacillus. An emulsion of the nonacid-resisting form was used for vaccination of guinea-pigs. The animals were infected in three months, and reinfected six months later. They are still alive and healthy up to eight months, while the controls, for each group, died from one to three weeks after infection, and from four to nine weeks after reinfection.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 683 722 (April 30) 1926

*Vaccination Against Diphtheria P. Lereboullet et al.—p 683
*Antitoxin and Anatoxin in Diphtheria Lesné —p 689.
*Mass Vaccination with Anatoxin C Flandin —p 691.
*Urticaria and Alkali Reserve Pasteur Vallery Radot et al —p 692
Cure of Gangrenous Abscess of Lung. Fiessinger and Olivier —p 693
"Fatal Fixation Abscess" Netter —p 694
*Pretuberculous Rheumatoid Purpura P Carnot et al —p 695
Case of Macrogenetosomia A Léri and M. Leconte —p 699
Therapeutic Meningeal Pneumoserosa A Tzanck and P Chevallier. —p 701.
Functioning in Kidney Sclerosis M Renaud and J Rolard —p 705
Lipiodol in Examination of the Lung J Forestier.—p 712
A Slow Streptococcic Endocarditis E Achitoux.—p 716
Distomatosis in Man. Desage —p 720

Anatoxin in Vaccination Against Diphtheria.—Lereboullet and his co-workers have vaccinated 1,414 children with diphtheria anatoxin. A dose of 0.5 cc. was given at the first injection, 1 cc. at the second and third, with three and one weeks intervals. Two injections induced immunity in 95 per cent; three in 100 per cent. The immunity still persists up to eight and twelve months. Only in a little over 3 per cent of the cases, the children had to interrupt their usual occupations on account of vaccinal reactions. The elective age for immunization is between 2 and 3; the receptivity is then maximal, while the reactions are minimal

Anatoxin and Purified Antitoxin in Prevention and Treatment of Diphtheria.—Lesné rarely observed complications with the purified diphtheria antitoxin A total of 100,000 units was given to a woman with a grave diphtheria. No phenomena of serum sickness occurred, although the patient had suffered previously with alternating attacks of asthma and urticaria. When haste is necessary, antitoxin should be used instead of anatoxin, especially in children under 3; immunization is more rapid with it.

Anatoxin in Vaccination Against Diphtheria.—Flandin injected 295 children with diphtheria anatoxin. There were no cases of diphtheria among the vaccinated within a year.

Urticaria and Alkali Reserve.—Pasteur Vallery-Radot, Blamoutier and Laudat found a low alkali reserve in two of seven cases of urticaria. Intravenous injection of 3 Gm of sodium bicarbonate in 100 cc. of water prevented further attacks of urticaria, while daily ingestion of 15 or 20 Gm, for a week, was ineffectual. Of five patients with normal or exaggerated alkaline reserve, the influence of sodium bicarbonate was manifest only in one. The effect in this case may have been due to a humoral shock from the injected drug.

Rheumatoid Purpura Preceding Tuberculosis.—Carnot, Libert and Bariéty report the case of a man, aged 40, in whom rheumatoid purpura preceded by a few days a fatal acute pneumonia with tuberculous meningitis. Similar cases seem to be rare; more frequent are those in which purpura occurs during the course of tuberculosis.

Comptes Rendus de la Société de Biologie, Paris

94: 421-492 (Feb 26) 1926 Partial Index

Magnesium in Growth of Mice J Leroy.—p. 431.
Putrefaction Microbes in Eggs H. Tissier.—p. 446
Cholesterol, Rickets and Ultraviolet Rays R Fabre and H Simonnet. —p 455.
*Hemochromogen in Acid or Base Medium. J. Roche —p 463.
Simplified Apparatus for Determination of Basal Metabolism M Soto and A Torino —p 473.
American Cutaneous Leishmaniasis C. Nicolle —p 476.
*Immunization with Tissue Grafts R Biglieri.—p 477.
*Calcemia and Glycemia in Thyroid Disease. C. P. Waldorp and R. A. Trelles —p 488
*Metabolism, Calcemia and Vagotonia in Acromegaly. C P. Waldorp —p 492.

Combination of Hemochromogen with Oxygen and Carbon Monoxide.—Roche says his research has confirmed Burker's theory that alkaline hematin retains for each gram-atom of iron a gram-molecule of oxygen. After having been reduced to hemochromogen, the alkaline hematin retains a quantity of carbon monoxide equivalent to that of the reduced oxygen.

Immunization with Tissues Containing Smallpox Virus.—Ovaries of rabbits with smallpox pustules, or even forty days after the appearance of the pustules (the animals consequently being immunized), were implanted in the peritoneum or beneath the skin of other rabbits. The latter animals were injected with smallpox virus thirteen days later, on the shaved skin. The inoculations proved negative; only a few pustules appeared in those injected subcutaneously. The inoculations were positive in the controls. Analogous experiments were made by Biglieri with skin fragments, testes and spleen. The data all testified that a minute dose of the virus, possibly attenuated, although incapable of inducing infection, is yet able to confer immunity.

Calcemia and Glycemia with Hyperthyroidism.—Waldorp and Trelles found the blood calcium reduced in twenty-six subjects with thyroid disease and increased basal metabolism. Under calcium treatment the calcium level rose. It seems that hypocalcemia may stimulate the involuntary nervous system. High glycemia was manifest in 50 per cent of eighteen patients.

Metabolism, Calcemia and Vagotonia in Acromegaly.—Waldorp noted an increased basal metabolism and a low calcemia in four cases of acromegaly. There was also pronounced vagotonia and eosinophilia. It is assumed that hypocalcemia may be responsible for the hyperexcitability of the vagus nerve.

94: 493 552 (March 5) 1926 Partial Index

Does Maize Contain a Vitamin Against Pellagra? Mouriquand —p 498.
The Cytology of the Peyton Rous Sarcoma and the Specific Substance. A Borrel —p. 500.
Artificial Pneumothorax and Maillard Coefficient Monceaux —p 509
Technic for Detection of Tubercle Bacilli Lancelin et al —p 519.
*Tubercle Bacilli in Books for the Blind Chatin and Rochaix —p 527.
*Cholesterol Content in Inanition Mouriquand and Leulier.—p 533
*The Blood in Articular Rheumatism. J Turries —p 539.
Influence of Trypsin on Blood Sugar. J. W. Grott

Tubercle Bacilli in Books for the Blind.—Chatin and Rochaix implanted in ten guinea-pigs fragments of pages from a braille book, used three months before by a tuberculous blind man Three of the animals developed tuberculous lesions; one died after a year.

Inanition and Cholesterol of Blood and Organs.—Mouriquand and Leulier state that the disturbances found in starving guinea-pigs differed from those noted in avitaminosis C. The cholesterol content of the blood was increased, while that of the liver, spleen and lung was unchanged.

The Blood in Acute Articular Rheumatism.—Turriès examined the blood of eight patients with acute articular rheumatism and anemia. The blood corpuscles appeared to be normally resistant; no hemolysins were found.

Journal des Praticiens, Paris

40: 273-288 (April 24) 1926

*Ultraviolet Rays in Tuberculous Peritonitis. Duguet and Clavelin.—p. 273.
Exophthalmos and Tumor of the Orbit. Terrien.—p. 277.
Neoplasm of Carpal Tendon Sheath. Hartmann.—p. 280.

Ultraviolet Rays in Treatment of Tuberculous Peritonitis.—Duguet and Clavelin used the rays in eight patients with persisting tuberculous peritonitis of from two to six months' standing, and rebellious to medical or surgical treatment. A clinical cure occurred in seven cases; one patient died. Subsidence of fever and gain of weight were the immediate results. The local action was excellent in ascites, and was satisfactory in the fibrocaseous form. A mercury quartz lamp of 1,500 candle power was placed at 1 meter distance, the first exposure lasting five minutes. The sittings were gradually lengthened to an hour, and the distance reduced. The treatment consisted of at least twenty exposures.

Journal d'Urologie, Paris

21: 193-288 (March) 1926

Genito-Urinary Disturbances with Portal Hypertension. G. Potel—p. 193.
*Surgical Treatment of Nephritis. A. Damski.—p. 203.
Colon Bacillus in Urinary Disease. J. Fisch.—p. 227.
Renal Compensation with Ureteral Calculi. O. Mercier.—p. 238.

21: 289-384 (April) 1926

Congenital Dilatation of Ureters. R. Bouchard.—p. 289.
Fragment of Ureteral Catheter Removed by Hypogastric Incision. L. Strominger and J. Blum.—p. 347.

Surgical Treatment of Nephritis.—Damski has operated in twenty-four cases of kidney disease. A definite cure was induced in 40 per cent; improvement in 30 per cent. Four died after the operation. Comparing his twenty-four cases with 110 on record, he concludes that a radical operation, possibly nephrectomy, is advisable in unilateral hemorrhagic nephritis, while expectant treatment should be the rule in ascending nephritis, unless there is grave retention of urine or infection. Painful nephritis with hematuria should be treated surgically, decapsulation with nephropexy being the method of choice in nephroptosis. In cases with tuberculosis of one kidney and painful nephritis of the other, removal of the first kidney might be followed by decapsulation of the other. Decapsulation may induce persisting improvement in acute nephritis rebellious to medical treatment, but he never witnessed complete recovery. In chronic nephritis with cirrhosis and arterial hypertension, an operation may do harm rather than good.

Médecine, Paris

7: 405-480 (March) 1926

Diseases of Heart, Vessels, Blood and Kidneys in 1925. P. Ribierre.—p. 405.
Posttyphoid Heart Disease. G. Étienne.—p. 417.
Angina Pectoris and Acrophagy. C. Lian and G. T. Flora.—p 420.
Tuberculous Myocarditis. L. Gallavardin and L. Gravier.—p. 431.
Extrasystoles of Nervous Origin. E. Donzelot.—p. 437.
Tachycardia from Heart Instability. E. Doumer.—p. 441.
Dissociation of Hemorrhagic Diatheses. Merklen and Wolf.—p. 444.
Erythroleukemic Syndromes. A. Clerc.—p. 449.
Renal Syphilis and Syphilitic Chronic Nephritis. P. Ribierre.—p. 454.
The Kidney in Amyloid Degeneration. M. Léon-Kindberg.—p. 459.

7: 481-560 (April) 1926

Obstetrics and Gynecology in 1925. L. Devraigne.—p. 485.
Mitral Lesions and Pregnancy. A. Couvelaire.—p. 492.
Torsion of Gravid Uterus. L. Demelin.—p. 494.
High and Low Cesarean Sections. C. Fournier.—p. 499.
Pubiotomy and Symphyseotomy in Obstetrical Therapy. V. Le Lorier—p. 503.
Pregnancy and Cancer. H. Vignes.—p. 510.
*Pernicious Vomiting. Lévy-Solal and J. Ravina.—p. 512.
Low Cesarean Section. L. Portes.—p. 517.
Hemorrhagic Metritis. A. Siredey.—p. 521.
Accumulation of Menstrual Blood in Douglas Pouch. Descomps.—p. 527.
Sterility and Insufflation of Fallopian Tube. E. Douay.—p. 533.
Inversion of the Uterus. H. Duclaux.—p. 540.
The Dangers of "Pacifiers." M. Duvoir.—p. 544.
D'Herelle's Bacteriophage. P. Hauduroy. Supplement, pp. 1-48.

Anaphylactic Origin of Pernicious Vomiting.—Lévy-Solal and Ravina sustain the theory that anaphylactic phenomena may be a determining factor in the uncontrollable vomiting of pregnancy. In a case of therapeutic abortion, the ovum was used for preparation of a glycerin extract. Injection of this extract a few days after the abortion induced in the woman a positive skin reaction, and reappearance of the vomiting which had been promptly arrested by the operative intervention. Pilocarpine hydrochloride, given on the basis of this experience, induced remarkable results in several desperate cases in which all other measures for desensitization had failed.

Paris Médical

59: 405-444 (May 1) 1926

Endocrinology in 1926. F. Rathery and R. Kourilsky.—p. 405.
Sugar Regulation in Pregnant Women. M. Labbé and M. Chevki. p. 416.
Suprarenal Secretion of Epinephrine. Tournade.—p. 423.
Uricemia and Uric Acid Metabolism. Weil and Guillaumin.—p. 439.

59: 445-460 (May 8) 1926

Modern Tendencies in Histology. J. Jolly.—p. 445.
*Immunization of School Children Against Diphtheria. Harvier and Réquin.—p. 456.

Anatoxin Vaccination of School Children Against Diphtheria.—Harvier and Réquin vaccinated with diphtheria anatoxin 228 school children with a positive Schick test. Two subcutaneous injections of 0.5 and 1 cc. were given, three weeks apart. Control Schick tests showed immunity in 95.4 per cent after two injections, and in 64 per cent after one injection. Pronounced reactions from the injections were never noted in children under the age of 7. Therefore, regular vaccination with diphtheria anatoxin may be made in all children between 2 and 7, without a preliminary Schick test. The latter appears positive in 78 per cent of children of this age. Two injections should be followed by a control Schick test. It is superfluous when three injections have been given.

Presse Médicale, Paris

34: 561-576 (May 5) 1926

Recurring Mastoiditis. G. Portmann and H. Retrouvey.—p. 561.
Kinked Form of Bilocular Stomach. Macaigne and Baize.—p. 563.
Painful Forms of Occult Lumbosacral Spina Bifida. C. Roederer and F. Lagrot.—p. 565.

34: 577-592 (May 8) 1926

Precancerous Stomatitis with Vegetations. H. Gougerot.—p. 577.
*Ocular Syndrome with Pituitary Tumor. O. Hirsch.—p. 578.
*Iodine Treatment of Goiter. P. L. Marie.—p. 580.

Visual Disturbances with Pituitary Tumors.—Hirsch calls attention to the eye syndrome observed among his 100 surgical cases of pituitary tumor. The syndrome may not be accompanied by external changes. Impaired acuity of sight and contraction of the visual field are the chief symptoms. Temporal or bitemporal hemianopia was encountered in 84 per cent. Primary atrophy of the optic nerves is another characteristic symptom; it was found in 89 per cent. An adenoma of the anterior pituitary lobe seems to secrete a substance, inducing acromegaly. As long as the adenoma is benign, there are no visual disturbances. Malignant proliferation of the adenoma is usually accompanied by acromegaly, adiposogenital dystrophy or visual disturbances. Seven distinct pituitary syndromes are now known, pituitary dwarfism and pituitary dysostosis being the latest to be described.

Iodine in Treatment of Exophthalmic Goiter.—Marie emphasizes the tendency to consider exophthalmic and ordinary goiters as iodine deficiency diseases. The various types of the goiter are explained by a different response of the organism and of the thyroid to the deficiency. The results of iodine treatment in exophthalmic goiter testify only to a disproportion between the iodine content and the requirement of the organism at the moment. Iodine is beneficial when used before thyroidectomy. The efficacy of continued iodine treatment seems questionable.

Schweizerische medizinische Wochenschrift, Basel

56: 361-388 (April 24) 1926. Partial Index

Erythema and the Erythema Dose. A. Béclère.—p. 361.
*Roentgen-Ray Treatment of Sarcomas. M. Lüdin.—p. 366.
Deep Roentgen-Ray and Radium Treatment of Tumors. Gilbert.—p. 368.
Indirect Action in Radiotherapy. A. Rosselet.—p. 371.
Curietherapy for Epithelioma Grafted on Lupus. A. Rosselet.—p. 373.

*Transmission of Roentgen-Ray Activity. Hopf and Ludwig.—p. 373.
Radiotherapy in Compression of Spinal Cord. Moppert.—p. 376.
*Roentgen-Ray Examination of the Lung. R. Staehelin.—p. 376.
*Radiologic Sign in Acute Peritonitis. G. G. Moppert.—p. 381.

Recent Research and Experiences in Radiology.—This issue is devoted to the transactions of the Swiss Radiological Society at its meeting in Lucerne in March, 1925. Lüdin reported the cases of three patients in whom the diagnosis of lymphosarcoma, melanosarcoma or large round-cell sarcoma was verified by biopsy, who are alive and well from five years to eleven months since the irradiation. Hopf and Ludwig found that rats fed on food which had been exposed to roentgen rays received the effects of the rays. Staehelin pointed out that in croupous pneumonia the shadows of the exudate extend over a large area, while in bronchopneumonia they appear as roundish spots. Abscess and gangrene do not give characteristic pictures until large cavities have formed. The shadow cast by infarct varies widely in shape and intensity; it may be mistaken for a tumor, or may not appear at all. In chronic passive congestion the picture is typical, though often mistaken; it is described in detail. Primary carcinoma appears usually as a shadow proceeding from the hilum, primary sarcoma and lobe carcinoma as a solitary round shadow. Secondary tumors easily escape detection. Echinococcus cysts cast round or oval shadows, with a sharper and more regular outline than a tumor. Syphilis usually casts round shadows in the hilum region, radiating toward the periphery. The shadows cast in pneumonoconiosis are discussed at length.

Early Radiologic Sign in Acute Peritonitis.—Moppert's suspicion of incipient peritonitis in two cases was reenforced by discovery on roentgenoscopy of some gas bubbles in the right hypochondrium, close to the diaphragm. Immediate intervention saved both patients.

Archivio Italiano di Chirurgia, Bologna

15: 237-352 (March) 1926

*Pathogenesis of Peptic Ulcers. II. S. Gussio.—p. 237.
Treatment of Arteriovenous Fistulas. G. Giordano.—p. 293.
Prostatic Enlargement. M. Aresu.—p. 301.
*Implants of Embryonal Tissue. C. Sartori.—p. 339.

Pathogenesis of Secondary Jejunal Ulcer.—Gussio divided dogs' stomachs in the middle and sutured each stump completely, draining each half with a separate gastro-enterostomy. Patches of necrosis were most numerous in the jejunum loop connected with the pyloric half of the stomach, while erosions predominated in the loop connected with the cardial half. The dogs all died, too soon for the erosions to have developed into ulcers. He ascribes the deaths to toxic products generated in the tissues of the aboral half.

Implants of Embryonal Tissue.—Sartori implanted sections of eye tissue from rabbit embryos in the eyes of fourteen adult rabbits. Whether the implants retained their vitality or not at first, they all, after reaching a certain stage, succumbed to rapid involution and were completely resorbed.

Archivio Italiano di Urologia, Bologna

2: 417-516 (March) 1926

*Embryonal Origin of Kidney Tumors. C. Natali.—p. 417.
*Bladder-Ureter Surgery. P. Bastianelli.—p. 455.
*Cystic Degeneration of the Kidney. R. Broglio.—p. 472.
Diverticula of the Bladder. L. Zagni.—p. 490.
*Urinary Fistula. F. Virgilio.—p. 501.
*Misleading Cystoscopic Findings. G. Bloch.—p. 505.
Spontaneous Fragmentation of Bladder Calculus. E. Pellecchia.—p. 508.

Kidney Tumors.—Natali presents evidence to prove the embryonal origin of the majority of kidney tumors.

Bladder-Ureter Cancer.—The epithelioma in the bladder involved the left ureter, but there has been no recurrence during the four years since Bastianelli resected the tumor area into sound tissue through a median laparotomy. He refrained from cauterization as the tissues heal more smoothly without it.

Cystic Degeneration of the Kidney.—Broglio treated with Payr's ignipuncture two patients, with polycystic kidney. The kidney was infected in one and very painful in the other case. This conservative treatment was followed by a reduction in the size of the kidney and improved functioning, with disappearance of all subjective disturbances. There was general visceral ptosis in both women. After puncturing each cyst separately, he concluded with nephropexy.

Rebellious Urinary Fistulas.—As a last resort before nephrectomy, as the only means to cure a fistula that had persisted for a year with chronic suppuration, after nephrolithotomy, Virgilio treated the young man with a stock vaccine. In less than three months the fistula had healed completely, with no recurrence during the eight months to date.

Cystoscopic Pictures Simulating Tuberculosis of the Bladder.—Bloch warns that, with true tuberculous lesions in the bladder, the functioning is always impaired, and there is little or no relief from pain and discomfort with silver nitrate treatment. In a case described, the mouths of the ureters looked as if the kidneys were diseased, but the urine from each was normal, and the whole clinical picture subsided under mild local measures.

Clinica Medica Italiana, Milan

57: 1-88 (Feb.) 1926. Partial Index

*The Leukocyte Index. P. Berri and M. Weinberger.—p. 55.
*Influence of Trauma of the Thorax. G. Magliano.—p. 59.
Nitrogen Metabolism in Pulmonary Tuberculosis. G. Gherardini.—p. 67.

The Leukocyte Index.—Berri and Weinberger reiterate that the relative proportions of lymphocytes and polymorphonuclears are a valuable aid in differential diagnosis and as a warning of complications. In the healthy adult the range of the index P/L is from 1.9 to 3.3: in children under 12, the index is 1. Acute infectious diseases have a high index, and a sudden rise in the index in chronic cases warns of impending complications. Systematic recording of the leukocyte index may render the Arneth and the Schilling hemogram counts unnecessary, they think.

Influence of Trauma of the Thorax on the Onset of Pleuropulmonary Disease.—Magliano queries why pneumonia developed after a mild contusion of the chest in one case, while in a second similar case, the contusion induced merely a transient congestion. The accidental presence or absence of the pneumococcus in the air passages seems to be what determines the outcome.

Clinica Pediatrica, Modena

8: 129-192 (March) 1926

*The Cerebrospinal Fluid in Children. A. Baccichetti.—p. 129.
*Epidemic Encephalitis in Children. F. Zibordi.—p. 151.
First Year Weight Curve of Infants in Institutions. G. Roi.—p. 162.
*Ichthyosis. P. Fornara.—p. 173.

The Cerebrospinal Fluid in Children.—Baccichetti states that the reducing power of the fluid was always diminished in tuberculous and purulent meningitis, but was normal or increased in serous meningitis, epidemic encephalitis and acute poliomyelitis. The pressure varied but did not seem high with tumors as in adults.

Epidemic Encephalitis in Children.—Zibordi obtained a positive response to intradermal injection of influenza bacillus vaccine (and to no other vaccine) in the three children with epidemic encephalitis whose cases are described. Two recovered completely; the necropsy in the third case revealed the typical changes of the disease in adults.

Ichthyosis.—Fornara urges tentative treatment for syphilis, and thyroid treatment, as a routine measure in every case.

Pediatria, Naples

34: 449-504 (May 1) 1926

*Prevalence of Leishmaniasis. F. de Capua.—p. 449.
*Skin Test in Scarlet Fever and Measles. S. de Villa.—p. 467.
Death After Intraspinal Injection of Serum. P. Ritossa.—p. 478.
Fibrous Sarcoids. G. Lupattelli.—p. 485.

Prevalence of Leishmaniasis.—De Capua shows the increasing frequency of kala azar in Italy. The Naples pediatric clinic had 401 cases under observation during the last ten years. The whole of southern Italy is infected, especially along the coast. The mortality is less than 15 per cent.

Skin Test in Scarlet Fever and Measles.—De Villa injected the Cristina and Caronia cultures intracutaneously. He is especially gratified by the usually negative results in infants under 1 year of age.

Policlinico, Rome

33: 613-647 (May 3) 1926

- *Dulness at the Apexes. L. Pezzotti.—p. 613.
- Early Intervention in Nephrolithiasis. E. Pazzi.—p. 617.
- Mechanism of Agglutination. N. Parise.—p. 620.

Dulness at the Apexes.—Pezzotti finds that repeated finger-finger percussion over an apex may produce in two or three minutes a slight dulness which disappears in about ten or fifteen minutes.

33: 649-683 (May 10) 1926

- Plague, Rats and Fleas. A. Lustig.—p. 649.
- *Stomach with Pulsating Vessels. G. Pieri.—p. 651.
- Suture of Heart. G. Bufalini.—p. 653.

Stomach with Pulsating Vessels.—Pieri adds a third case of this syndrome to the two published recently by Delore. It manifests itself by repeated gastric hemorrhages while a laparotomy reveals only distention and marked pulsation of the blood vessels, especially on the greater curvature.

33: 225-280 (May 1) 1926. Medical Section

- *Alcohol and the Liver. P. Albertoni.—p. 225.
- Alimentary Glycemia. L. Condorelli.—p. 230.
- *Pleurisy in Pneumothorax. P. Luridiana.—p. 255.
- Treatment of Hookworm. G. Giglioli.—p. 263.

Alcohol and the Protective Function of the Liver.—Albertoni administered daily to dogs 3 Gm. of alcohol per kilogram of body weight, and 45 Gm. daily for three weeks to a volunteer who had been a total abstainer before. He found a higher glycemia, especially after administration of dextrose. Amyl alcohol had a still more pronounced action.

Pleurisy in Pneumothorax.—Luridiana regards pleurisy in artificial pneumothorax as a manifestation of allergy.

Riforma Medica, Naples

42: 385-408 (April 26) 1926

- Objective Signs of Pain. C. Biondi.—p. 385.
- Amebiasis in Sicily. P. Moretti.—p. 388.
- *Serotherapy of Gas Gangrene. A. Pellegrini.—p. 391.
- Bladder Calculus from Foreign Body. P. Manetta.—p. 404.

Serotherapy of Gas Gangrene.—Pellegrini had good results with preventive and even with therapeutic injections of various antiserums in cases of gas gangrene. In one patient, given an insufficient preventive dose, a small patch of local gangrene developed, but local injections of the antiserum cured it. This serotherapy deserves a wider use.

Rivista di Clinica Pediatrica, Florence

24: 289-360 (May 5) 1926

- Intravaginalis Torsion of Testis. S. Marconi.—p. 289.
- *Acetonemic Crises. P. Fornara.—p. 296.
- Reducing Substances in Cerebrospinal Fluid. P. Bosio.—p. 311.

Acetonemic Crises.—Fornara reports five cases of nondiabetic acetonuria in infants. Somnolency as well as agitation or convulsions may be the symptoms. Association with cyclic vomiting is frequent. Administration of sodium bicarbonate helps almost immediately.

Archivos Arg. de Enf. del Ap. Digestivo, Buenos Aires

1: 399-604, 1926

- Functional Pain in the Rectum. C. Bonorino Udaondo and L. I. Sanguinetti.—p. 399.
- *Paraintestinal Inflammatory Tumors. R. Solé and J. Bacigalupo.—p. 412.
- Basal Metabolism in Hyperthyroidism. Castex and Schteingart.—p. 430.
- Tuberculous Peritonitis Simulating Gallbladder Disease. Martini.—p. 456.
- Fistula After Gastro-Enterostomy. J. R. Goyena et al.—p. 473.
- *Cure of Tuberculous Enteritis. P. Escudero and J. W. Tobias.—p. 500.
- Eventration Through the Diaphragm. M. R. Castex et al—p. 516.
- Radiologic Study of Static Disturbances. Martini and Comas.—p. 535.

Amebic Appendicitis.—When a foreign body perforates the wall of the intestine, the inflammatory reaction develops outside the bowel; at least this was the sequence in Solé and Bacigalupo's four cases. In the one here described, the "foreign body" was an amebic focus which had evidently located deep in the appendix wall and had perforated outward. The abscess once formed had burrowed into the bowel, and amebas were found in the abscess and also in the adjoining bowel wall. The clinical picture had been that of ordinary appendicitis. Paraintestinal inflammatory tumors do not obstruct the bowel. Surgical measures should be supplemented by treatment of the parasites.

Tuberculous Enteritis.—The ulcerating tuberculous affection had induced anemia and diarrhea but there was no hemorrhage. The symptoms then subsided for a year, when they returned more severe, with continuous fever, night sweats and loss of 20 Kg. in weight. The tuberculin test was positive but no tubercle bacilli could be discovered. Under naphthalin treatment by the mouth a clinical cure was realized, with prompt gain in weight. The patient, a man, aged 46, was given from three to six tablespoonfuls of a palatable emulsion of naphthalin daily for two or three weeks, resuming it after a pause of the same length. Each spoonful represented 0.6 Gm. of naphthalin. Improvement was evident in a month and by the sixth month the clinical cure was complete, with gain of 18 Kg. in weight and full earning capacity restored.

Archivos Esp. de Enf. del Aparato Digestivo, Madrid

9: 129-192 (March) 1926

- The Tetraiodophenolphthalein Test. Gallart Monés and Pinós.—p. 129.
- *Traube Space Sign of Gastroptosis. J. Tarruella.—p. 146.
- The Digestive Apparatus in Drug Addicts. Romualdo J. R. de Vera.—p. 158.

Sign of Congenital Gastroptosis.—Tarruella has noticed in what he calls *virginal gastroptosis that the space of Traube* was opaque and hard, as if full of a fluid or obstructed by a solid body. The semilunar opacity thus indicates an anatomic anomaly of the stomach.

Brazil-Medico, Rio de Janeiro

1: 111-124 (Feb. 27) 1926

- *The Parathyroids and Spasmophilia. Salvio Mendonça.—p. 111.
- Hemophilia and Hemophilic Syndromes. Americo Vallerio.—p. 113.
- *The Poços de Caldas Sulphur Springs. Mario Mourão.—p. 115.

The Parathyroids and Spasmophilia.—In the three cases reported by Salvio Mendonça the parathyroid insufficiency and the consequent inability to retain calcium were unmistakably responsible for the spasmophilia. There were no further manifestations of the spasmophilia after the second day of parathyroid treatment. The children were from 5 *months to* 11 years old; in one with probable congenital syphilis, specific treatment had no effect until after the parathyroid treatment was under way.

The Mineral Waters of Brazil.—Mourão refers in particular to the hot sulphur springs at Poços de Caldas, which he calls the hydromineral miracle of Brazil. It lies at an altitude of 1,230 meters above sea level. He describes some remarkable instances of cures under the influence of the waters, in polyneuritis, sciatica, eczema, nephritis, etc.

Prensa Médica Argentina, Buenos Aires

12: 905-936 (Feb. 20) 1926

- *Amebiasis in Argentina. M. R. Castex and D. Greenway.—p. 905.
- Transverse Orthodiagraphic Roentgenography of the Heart. M. Miranda *Gallino.—p. 920.*

Treatment of Amebiasis.—Castex and Greenway here conclude their analysis of their experience with 479 patients with amebiasis, forming 23.6 per cent of the 2,023 whose stools have been examined for parasites. The infestation was pure in only ninety-two. The symptomatology is proteiform, and it may take months to dislodge the parasites. Each course of emetine should be followed by suspension for two or three months, and emetine polyneuritis is liable to develop when least expected. In one woman the amebiasis had induced intense pruritus for years; she was unable to tolerate emetine or bismuth, and efforts to give drugs by the rectum entailed severe inflammation in the colon. The infestation still persists after six or eight months of treatment. The patients must be made to realize that it takes a long time for the ulcerations to heal, six to eight months in many cases, and that treatment has to be continued to the final and absolute extinction of the infestation, changing drugs at need

Repertorio de Medicina y Cirugía, Bogota

17: 127 184 (Dec) 1925

*The Hookworm Index A Duarte A.—p 139

Importance of the Hookworm Index.—Duarte extols the Stoll method as superior to others in simplicity and precision He describes the technic and charts the findings with it in Colombia as applied on a large scale.

Revista del Círculo Médico de Córdoba

14: 1 68 (Feb) 1926

Electron Correlation and Cancer G V Stuckert —p 1.
*Acute Gland Tuberculosis T Castellano and Antenor Tey.—p. 12
The Cordoba Milk Supply Ramon E Lopez —p 20
Trephining with Galvanocautery in Chronic Glaucoma A Urrets Zavalia. —p 30

Rapidly Fatal Hypertrophic Tuberculosis of Glands.—Castellano and Tey report a case in which the clinical picture suggested lymphogranulomatosis or Hodgkin's disease, but excision of one of the much enlarged glands confirmed the tuberculous nature of the disease. It ran a rapidly fatal course, the woman, aged 45, dying three months after the first discovery of enlargement of glands in the neck. They assume that it represents a primary infection; when secondary, it runs a more torpid and chronic course. The leukocyte count was between 12,000 and 14,000, and 81 to 84 per cent were neutrophils, the erythrocytes and hemoglobin did not vary much from normal.

Revista Esp. de Urología y Dermatología, Madrid

28: 59 116 (Feb) 1926

*Cavernous Angioma Ramon Castroviejo —p 59
*Cure of Psoriasis C Serna —p 62

Electrolysis in Treatment of Angiomas.—Castroviejo adds another to the list of his cases successfully treated with bipolar electrolysis with platinum needles The cavernous angioma was on the upper eyelid, and had grown rapidly to the size of a cherry when the infant was brought to him Five sittings were given, the current 10 milliamperes, ten minutes with the standard current and ten more with the current inverted. The small red line left was obliterated with the galvanocautery.

Cure of Psoriasis.—Serna reports the complete cure in four cases of psoriasis under intravenous injection of a 50 per cent solution of sodium salicylate, at two or three day intervals, never giving over more than 4 Gm in one day, to a total of 20 or 30 Gm In two other cases the salicylate did not seem to be effectual, so he injected emetine subcutaneously, at weekly intervals, to a total of 0 45 or 0 55 Gm in twenty-nine and thirty-five days The local measures were continued with both, as also organotherapy in the hypogenitalism type, and glucose in the seborrheic type. The pruritus subsided first and the pigmentation last.

Revista Médica de Barcelona

3: 225 319 (March) 1926 Partial Index

*Microcolorimeter Test for Urea Ubaldo Cuffi —p 228
Etiology and Treatment of Athrepsia M Torello Cendra —p. 236
Selective Partial Pneumothorax and Double Pneumothorax C. Xalabarder. —p 263
*Biochemical Diagnosis of Pregnancy. F. Carreras —p 274

Microtest for Urea in Blood and Urine.—Cuffi gives the details for the microcolorimeter test with urease which does not require more than 0 3 cc of blood or urine, the blood oxalated, the urine diluted, each treated with urease, dealbuminized, filtered and nesslerized.

Biochemical Diagnosis of Pregnancy.—Carreras believes that the flocculation methods are proving reliable in the diagnosis of pregnancy. Interferometry requires apparatus and complicated technic. The sedimentation test gives conflicting testimony. The Abderhalden procedure yielded dependable results in 90 per cent of the tests, as also the phlorhizin plus local anesthetic test in the first three months of the pregnancy. Later than this, the response is unreliable.

Semana Médica, Buenos Aires

1: 481-532 (March 11) 1926

*Treatment of Mumps. E. A. Molinelli.—p. 481.
*Embryotomy with Living Fetus · J. B. González —p. 492.
Color Reaction in Primary Amine Cycle J A Sanchez —p. 498
Bronchiectasia. R. C Bizzozero —p 501.
Genital Urinary Inflammation from Violent Muscular Exertion. A. A. Masciotra —p 515.
Main Factors in Chronic Rheumatism E Pietranera —p. 517.
*Sterility in Women R. Schwarcz and D E Centanaro —p 524.
Traumatic Rupture of Male Urethra. N C Torres —p. 527.

Arsenicals in Treatment of Mumps.—Molinelli applied neoarsphenamine or other arsenical in 100 cases of mumps, as Kermorgant claims to have found a spirochete as the causal agent of the disease. The results were entirely negative; complications developed in the usual proportions, and no preventive or curative action was apparent.

Embryotomy with Living Fetus.—González remarks that although medical jurisprudence accepts embryotomy, yet it should be the last resort now that cesarean section proves successful in 80 per cent of cases such as were treated by embryotomy before Pasteur's day. In the graver cases, the favorable outcome with the Porro and Portes operations in more than 70 per cent should turn the scale against embryotomy.

Insufflation of the Tubes.—Schwarcz and Centanaro applied Rubin's pertubation test, insufflating air, in twenty-eight cases of sterility. In those in which the tubes were impermeable, there was a history of adnexitis in 70 per cent and of metritis in 25 per cent. One woman complained of pain for two or three days, and in another the adnexitis flared up anew. In two others a laparotomy within a fortnight revealed a blood cyst in one tube or a hematosalpinx, in addition to old chronic adnexitis. He queries whether the persufflation could have been responsible for these recent lesions.

1: 533 584 (March 18) 1926

Amebiasis in Argentina F. L Niño —p. 533
Sanocrysin Treatment of Tuberculosis. F. Etcheverry Boneo —p. 560.
Cancer of the Breast and Gestation. J. C. Ahumada —p 567.
*Extraction of Needle from Deep Tissues R Faggioli.—p 571.
Agonal Invagination in Children Puente and Mathie —p 571.
Fish in the Campaign Against Malaria M Sella —p. 576

Extraction of Needle Deep in the Tissues.—Faggioli discovered a puncture in the stomach region of the 14 months infant, who was evidently suffering, and a linear resistance could be felt in the depths, suggesting that a pin or a needle had been forced into the tissues It lay across the body, the tip toward the right, probably in the stomach He buried his hands in the epigastrium, bringing the needle perpendicular to the spine, the tip toward the skin. His manipulations thus forced the tip up to and through the skin, where an assistant seized it with forceps It proved to be a rusty needle, 4 5 cm long, and the child was saved a laparotomy and has been in perfect health since.

Deutsche medizinische Wochenschrift, Berlin

52: 733 776 (April 30) 1926

*Meningococcus Sepsis. U Friedemann and H. Deicher.—p 733.
*Pathogenesis of Glomerular Nephritis T. Fahr.—p 735
*Paratyphoid. Uhlenhuth and W. Seiffert —p 737. C'cn.
*Serology in Therapeutic Malaria J. R. Mörch —p 740
Reconstruction of the Prepuce S. Ostrowski —p 742
*Chondrodystrophy in Mother and Child H Baumm —p 743.
Gonorrhea in Boys A. Alterthum —p 746
*Tubes and Migration of Ovum F v. Mikulicz Radecki —p 747.
Pregnancy Disturbances B Aschner —p 749
Lower Uterine Segment H R Schmidt —p 752
Inertia of the Uterus G Haselhorst —p 753
Retention of Placenta. R. Schröder —p 755.
Nitrates in Watered Milk K Süpfle —p 755
Scandinavian Literature in 1925 H Scholz —p 771.

Meningococcus Sepsis.—Friedemann and Deicher separate a special ("lenta") form from meningococcus sepsis. It begins with a rhinitis or bronchitis, and is characterized at first by a fever of the tertian type, but without real chills. Later on, the attacks become more frequent. The general condition is good, especially during intermissions. An exanthema resembling erythema nodosum is a constant feature The fever may persist for months. The diagnosis is confirmed by cultivation of meningococci from the blood.

Prognosis is favorable. They point out that catarrhal diseases of the respiratory organs are quite frequently due to meningococci. One of the authors was infected by a patient and had three attacks of fever, exactly forty-eight hours apart, after an incubation of three days.

Pathogenesis of Glomerular Nephritis.—Fahr concludes that toxic swelling of the endothelial cells of glomeruli—not a spasm of the vas afferens—is the primary lesion in glomerular nephritis. It may progress into the vas afferens. He admits that there are more leukocytes in the efferent vessel than in the afferent, but this is due to the narrower wall of the former predisposing to stasis, not to a retrograde immigration of leukocytes.

Paratyphoid.—Uhlenhuth and Seiffert review the present status of paratyphoid infection and food poisoning. The causative agents may be differentiated by cultural characteristics—especially the formation of a viscid substance—and by agglutination.

Serology in Therapeutic Malaria.—Mörch believes that the positive Wassermann reaction provoked in general paralysis patients by the malaria treatment is nonspecific. The flocculation (sigma) reaction becomes only exceptionally positive by it.

Chondrodystrophy in Mother and Child.—Baumm delivered by suprapubic cesarean section a chondrodystrophic dwarf. The child presented the same malformation as the mother.

Tubes and Migration of Ovum.—Mikulicz-Radecki attributes to the movements of the fallopian tubes an important rôle in the transportation of the ovum to the uterus. Impairment of these movements by inflammation and its sequels or by a deficient blood supply may have an important bearing on the pathogenesis of extra-uterine pregnancy and sterility.

Klinische Wochenschrift, Berlin

5: 825-872 (May 7) 1926

*Intrapulmonary Pressure. M. Bürger.—p. 825. C'cn.
*Metabolism of Tumors. O. Warburg et al.—p. 829.
*Thirst Injury by Dehydration. H. Aron.—p. 832.
Gas Metabolism. R. Frank and R. Herzger.—p. 834.
*Serology of Genital Tumors. K. Volkmann.—p. 837.
Leduc's Currents. F. Scheminzky.—p. 839.
Cisterna Puncture. A. v. Sarbó.—p. 841.
The *p*H in Staining of Blood. H. Mommsen.—p. 844.
Heart Sequels of Typhus. M. M. Gubergritz.—p. 845.
The Carbon-Nitrogen Ratio. D. Ackermann.—p. 848.
*Calcium-Magnesium Ratio. Pincussen and Dimitrijevič.—p. 849.
The Diaphragm and Birth Injury. M. Landsberger.—p. 850.
Diet in Constipation. O. Simon.—p. 851.
Birth Injury and Brain Disease. F. Wohlwill.—p. 853. C'cn.

Intrapulmonary Pressure.—Bürger made experiments on the effects of increased intrapulmonary pressure on the circulation. When the subjects made a prolonged expiration against a higher pressure, the arterial pressure usually fell, and some of them—especially those with small hearts—became unconscious. Convulsions from cerebral anemia occurred. In athletes with hypertrophied hearts the right ventricle was able to overcome the pressure exerted by the air and the circulation was maintained. He believes that the sudden emptying of the left heart due to a similar mechanism (Valsalva) is responsible for many instances of drowning in persons who are diving or swimming below the surface of the water. The sudden death occurring during defecation in persons with a weak heart may have a similar cause.

Metabolism of Tumors.—Warburg, Wind and Negelein investigated the problem of the possibility of killing tumor cells in the animal by lack of energy supply. Theoretically the tumor is more independent than normal tissue, since it can live either aerobically (by utilization of oxygen) or anaerobically—by fermentation, if there is a sufficient supply of dextrose. Yet there is hope in the fact that the supply of the tumor is less good than that of other tissues. The sugar concentration of the blood from the veins of animal tumors was on the average 57 per cent less than that of the arterial blood. A tumor takes about 70 mg. of dextrose from 100 cc. of blood—against 2-16 mg. removed by normal organs. Normal organs take in rather than give out lactic acid, if the oxygen supply is good. Tumors always produce lactic acid—about 46 mg. per hundred cubic centimeters of blood. These figures indicate at the same time that their tumors used about 66 per cent (46/70) of the dextrose for fermentation and only 24 per cent for oxidation. The amount of oxygen necessary for the oxidation of 24 mg. of dextrose is about the whole amount (18 cc.) contained in the 100 cc. of blood. Thus, the oxygen supply of the tumor is still poorer than the dextrose supply. The amount of fermentation is strongly influenced by the concentration of the dextrose, the optimum being at 0.2 per cent. Therefore, an increased glycemia enhances considerably the growth. Hypoglycemia alone—no matter how extreme—cannot kill the tumor, since it can get along on respiration alone. Respiration and fermentation of particles of tumors taken from animals kept for hours in insulin convulsions were almost normal. They tried to influence the tumors by keeping the animals for forty hours in gas mixtures containing only 5 per cent of oxygen and a little ammonia (to lower the acidosis). This would diminish the respiration of the tumor, while the fermentation is naturally low in those ("venous") parts, which are supplied by blood that had passed through other ("arterial") parts of the tumor. The success was greater than expected, since almost the whole of the tumor was killed, only a thin superficial layer remaining intact.

Thirst Injury by Dehydration.—Many alleged cases of pneumonia in infants are—according to Aron—only manifestations of hyperthermia from thirst. The rapid breathing is only one symptom of the lack of water. Dry wrinkled skin, depressed fontanels, dry red tongue, hoarse voice, and vomiting are the usual symptoms. A wrong diagnosis may entail the death of the child; administration of water or salt solution by the mouth or rectum saves it. Pyuria and albuminuria are symptoms and sequels of the dehydration.

Serology of Genital Tumors.—Volkmann tested 200 serums from women with genital tumors, using the interfereometric reading of Abderhalden's reaction. He obtained positive results in 187 serums. The reaction seemed to be specific even for different types of tumors.

The Calcium: Magnesium Ratio.—Pincussen and Dimitrijevič found a lowering of the calcium-magnesium ratio in the blood in ether-chloroform anesthesia.

Medizinische Klinik, Berlin

22: 677-714 (April 30) 1926

Treatment of Pulmonary Tuberculosis. C. Klieneberger.—p. 677.
*Hormone of Suprarenal Cortex. R. Stephan.—p. 679.
The Marathon Runner. P. Schenk and M. Wissemann.—p. 683. C'cn.
Artificial Abortion. F. Kermauner et al.—p. 686. C'tn.
Tabes in Two Sisters with Congenital Syphilis. J. Daube.—p. 687.
*Carbon-Nitrogen Ratio in Urine. E. H. Fishberg.—p. 689.
Carcinoma of Spermatic Vesicle. H. Kudlich.—p. 691.
Heterotypic Chordoma. L. Sommer.—p. 692.
"Negative Pressure in Sinusitis." Lehr.—p. 693.
Successful Removal of Spinal Cord Tumor. O. Maas.—p. 694.
*Gummas. F. Lesser.—p. 694.
Gonorrhea in the Female. H. Holzamer.—p. 697.
Recent Works on Digestive Tract. W. Wolff.—p. 701.
Goat Milk Anemia. B. de Rudder.—p. 702. C'cn.

Hormone of Suprarenal Cortex.—Stephan made extracts from the cortex of the suprarenals and tested their effects on pernicious anemia patients. The injection causes an almost immediate decrease in erythrocytes, which is followed in a few hours by an increase and then a return to the previous figures. The coagulation time, which is very short in pernicious anemia, is further shortened at first and then lengthened. The blood sugar follows a similar curve. He assumes that the increase in erythrocytes and decrease in the coagulation ferment is due to a blocking of the reticulo-endothelial cells by the hormone he believes to have extracted from the suprarenal cortex.

Carbon-Nitrogen Ratio in Urine.—Fishberg found a carbon-nitrogen ratio of 0.6-0.85 in the urine of healthy and sick children. The high ratio in breast-fed infants depends entirely on the alimentation. She found no signs of dysoxidative carbonuria in acetonuria, during a reducing treatment, nor in a cachectic child.

Gummas.—Lesser regards gummas as primary necrosis of the organ, due to proliferation in the blood vessels. Miliary syphilomas with their good vascularization are almost the opposite of miliary tubercles. The spirochetes are chiefly parasites of vessels, not of tissues. The cellular reactions originating in the walls of the vessels are in the early period chiefly of infiltrative nature; in the late period, of the productive type.

Münchener medizinische Wochenschrift, Munich

73: 723-764 (April 30) 1926

Thoughts on Medicine. A. Bier.—p. 723. C'td.
*Sugar Mobilization After Insulin. E. F. Müller and W. F. Petersen. —p. 726.
Phosphorus Fractions of the Blood. H. Heinelt.—p. 729.
Relapsing Fever Treatment of General Paralysis. H. Hoff and L. Horn. —p. 731.
*The Babinski Phenomenon. O. Clauss.—p. 733.
Scapular Myalgia. A. Fürstenberg.—p. 734.
Heart Disease in Life Insurance. K. Grassmann.—p. 737.
Congenital Clubfoot. H. A. Staub.—p. 739.
Tonsillotome. A. Hartmann.—p. 740.
Sedimentation Test. O. H. Adler.—p. 741.
Medicolegal Obstetrics. M. Hofmeier.—p. 743.
The Artificial Leg Question. R. Pürckhauer.—p. 744.
Chronic Nephritis. Schlayer.—p. 746.

Sugar Mobilization After Insulin.—Müller and Petersen show that subcutaneous injection of insulin causes an almost immediate rise in blood sugar, due to its mobilization in the liver. It begins earlier than the main hypoglycemia phase, but persists as long as the insulin is circulating. Epinephrine seems to be an antagonist of insulin only when injected later. If epinephrine is given first, or at least simultaneously, the insulin hypoglycemia is more pronounced. Individual differences in the action of insulin are due to the readiness with which the liver liberates sugar. Insulin hypoglycemia is more pronounced in animals which respond to epinephrine with only a moderate hyperglycemia than in others. Insulin has three actions: one which increases the extrahepatic sugar metabolism by acting from the circulation; another, which promotes glycogen formation by a reflex (for instance after intracutaneous injections). A third action mobilizes the liver glycogen. While the promotion of glycogen fixation in the liver is beneficial, its mobilization seems to be undesirable. These two aspects of the action of insulin deserve clinical consideration.

The Babinski Phenomenon.—Clauss induces the dorsal flexion of the big toe by opposing the patient's active flexion of the knee. He mentions that Babinski presented his paper just thirty years ago.

Wiener klinische Wochenschrift, Vienna

39: 493-520 (April 29) 1926

*Permeability of Tissues. A. Fröhlich and E. Zak.—p. 493.
*Treatment of Epidemic Meningitis. F. Hamburger.—p. 497.
Surgical Tuberculosis. J. Rosner.—p. 498.
Cervicovaginal Fistulas. J. Sahler.—p. 500.
Dextrose Injections. K. Stejskal.—p. 502.
The Cerebrospinal Fluid. M. Schacherl.—p. 504.
Prevention of Oral Sepsis. M. Kraus.—p. 506.
Peritonsillar Abscesses. O. Mayer.—p. 508.
Chronic Gastritis. W. Zweig.—p. 509.
Radium Treatment of Cancer. G. Riehl. Supplement.—pp. 1-16.

Permeability of Tissues.—Fröhlich and Zak injected frogs with acid fuchsin or sodium ferrocyanate after previous injections of theophyllin. These animals developed spasms, and the presence of the former substances could be detected in the central nervous system, while the controls, that had received no theophyllin remained normal. Frogs and rabbits became by it quite sensitive to morphine. Tadpoles grow and undergo metamorphosis more rapidly in weak solutions of theophyllin. These and other effects of the drug may be explained by a general increase of the permeability of the tissues for small molecules, while the permeability for colloidal particles is reduced—thus causing an exaggeration of normal conditions. Pituitary extracts, epinephrine, calcium and cinchophen seem to have an opposite action.

Treatment of Epidemic Meningitis.—Hamburger withdraws all the cerebrospinal fluid gradually, substituting air for it at the same time (about 50-100 cc. in children). Then he raises the patient's pelvis and injects gradually serum, withdrawing at the same time the air, in portions of 10-20 cc. He reports a cure in three out of four cases.

Zentralblatt für Chirurgie, Leipzig

53: 977-1040 (April 17) 1926

The Cautery Iron Question. H. Hadenfeldt.—p. 978.
Relaxation of the Sphincter Ani. P. Esau.—p. 981.
Operative Treatment of Gastroptosis. W. Stemmler.—p. 984.
Autohemic Treatment of Infections of the Face. R. Hinze.—p. 987.
*The Dangers of Braun's Anastomosis. G. Kowtunowicz.—p. 993.
Methenamine or Catheterization? J. J. Stutzin.—p. 994.
Primary Wound Closure After Appendectomy. C. Strauch.—p. 995.
Errors and Dangers in Stomach Operations. K. H. Bauer.—p. 997.

The Dangers of Braun's Anastomosis.—The slit remaining between the mesentery of the intestinal loop used in the anastomosis and the anastomosis itself constitutes a potential danger. Kowtunowicz had a case in which nearly the entire small intestine had slipped through, with resultant strangulation and gangrene of the afferent limb of the anastomosis. Two or three stitches close the slit and obviate this danger.

Zentralblatt für Gynäkologie, Leipzig

50: 1042-1104 (April 17) 1926

*Bifid Uterus and Its Repair. P. Strassmann.—p. 1051.
Fuchs' Metroplasty of Cleft Uterus. Puppel.—p. 1059.
Delivery of Fetus with Gastroschisis and Spinal Curvature. B. Ottow. —p. 1059.
*Postclimacteric Bleeding and Ovarian Tumor. J. Schiffmann.—p. 1065.
*Vaccine Treatment of Gonorrhea. F. Wolff.—p. 1069.
*Vaginal Secretion Reaction and Gonorrhea. E. Stengel.—p. 1078.

Bifid Uterus and Extension of the Operation for Uniting the Horns.—Strassmann holds that the operation for uniting the two horns of the bifid uterus should be better known and more widely practiced. He sees no justification for tubectomy in these cases. He operated in seven cases of bilocular uterus, and in eleven cases of bifid uterus. In all, a septum was present in the vagina. The operation proved useful in a case of early, incomplete abortion in one of the halves of a double uterus with continued bleeding, by making complete evacuation possible. He performed the operation with success in cases with hematometra, hematocolpos, hematosalpinx, etc. By the abdominal route he operated in two cases of infected or inflamed adnexa; by the vaginal route in two cases with abscesses of the adnexa. He lost one of the latter patients from progressive infection. This was the only fatal case. Several of his patients had submitted to repeated laparotomies, but had been relieved of their symptoms only after repair of the uterine malformation. A number of his patients have borne living children since this operation.

Postclimacteric Bleeding and Ovarian Tumor.—Postclimacteric bleeding without a lesion of the uterus is an important early sign of ovarian tumor. A number of authors have pointed out a connection between granulosa cell tumors of the ovary and hypertrophic changes in the uterus and uterine mucosa. Schiffmann made microscopic studies of uterus and ovary in two cases of ovarian carcinoma with postclimacteric bleeding. The tumors were of the granulosa cell variety, and the uterine changes suggested ovarian hormonal influence. Since postclimacteric bleeding without lesion of the uterus suggests this type of ovarian carcinoma, it would seem a mistake to postpone operation until the appearance of a palpable tumor, for this class of tumors frequently remain small for a long time. Theoretically, they would seem to be suitable for roentgen-ray treatment, but the clinical basis for such an opinion is lacking.

Vaccine Treatment of Gonorrhea in Women.—Wolff's material consisted of 100 refractory cases. He injects intramuscularly freshly prepared vaccine, killed with one half of 1 per cent of phenol, and used within four or at most eight weeks. A dose of from five hundred millions of germs upward may safely be given twice a week. The reactions are less than with commercial vaccine, because endotoxins from decomposition of cocci are absent from the fresh product. The source of the organisms should be a clinically virulent case of acute gonorrhea or acute complications. In about forty cases he used living vaccine and found it superior in action to killed vaccine. There was no metastasis from its use. The inoculations are made in three or four wheals made in the subcutaneous tissue of the arm or thigh. The size of the dose is relatively unimportant. The reaction at the site of vaccination is stormy, a true phlegmon develops.

This passes in one to three days, leaving a hard infiltration at the site of the wheal. Vaccination must not be repeated before this infiltration is absorbed. If one repetition is not sufficient, there is not much hope in continuing. The abscesses contain living gonococci and no other organisms. Since the abscesses sometimes appear as late as two weeks after vaccination, it is evident that the gonococci remain alive for a considerable time. All cases but one of abscess formation at the site of vaccination were followed by clearing up of obstinate foci in the cervix. Urethral gonorrhea in women is not helped by vaccination, as its effects do not extend to the surface of the mucous membrane. Wolff had better success with autogenous than with heterogenous vaccines and found that the organisms should not be from too old strains. Patients greatly weakened by chronic disease should not receive vaccine treatment, but for other chronic cases showing no tendency toward a cure treatment with living vaccine is the therapy of choice.

Acid Reaction of the Vaginal Secretion and Gonorrhea.—Stengel made 123 examinations to test Danin, Opitz' and Rehn's claims of the value of this reaction in the diagnosis of gonorrhea. He concludes that absence of the acid reaction might justify a suspicion of gonorrhea; the reaction can be no more, however, than an auxiliary in diagnosis. Apparently it should be useful to indicate the progress of cure.

Zentralblatt für innere Medizin, Leipzig

47: 417-432 (May 1) 1926

*Amyloidosis. E. Letterer.—p. 417.

47: 433-456 (May 8) 1926

"Tuberculosis and the Practitioner." J. Ritter.—p. 434.

Nature and Origin of Amyloidosis.—Letterer caused amyloidosis in mice not only by casein and other proteins, but also by injection of peptone as well as of colloidal sulphur and selenium. Mice with amyloid had less globulins in the serum than those which had resisted the injections, and even a little less than normal animals. He believes that the increased loss of cell globulins is the first condition for amyloidosis. The second condition may be a fermentative, chemical or biologic precipitation of globulins.

Grèce Médicale, Athens

28: 1-8 (Feb.) 1926

Experimental and Bacteriologic Research on Ozena. G. Blanc and G. Pangalos.—p. 1.
*Action of Liquid Petrolatum in Digestive Tract. E. Contoléon and G. S. Joannidès.—p. 2.
Anaphylactic Reaction to Preventive Plague Antiserum. G. S. Joannidès.—p. 4.

Action of Liquid Petrolatum in the Digestive Tract.—Contoléon and Joannidès report from their experiments on dogs that liquid petrolatum reenforces peristalsis in the intestines and prevents absorption as it gets between the contents of the bowel and the wall. An excised loop of intestine, plunged into liquid petrolatum at once displays an intense peristalsis, the same as in cold water or in acetic acid or concentrated sodium sulphate. Fifteen minutes after five tablespoonfuls of liquid petrolatum had been poured into the stomach, a toxic dose of strychnine could be introduced into the stomach without any symptoms of strychnine poisoning, while the control dog had general tonic convulsions.

Acta Chirurgica Scandinavica, Stockholm

60: Supplement VII, pp. 1-258

*Surgical Treatment of Peptic Ulcer. G. Bohmansson.—p. 1.

Surgical Treatment of Gastric and Duodenal Ulcers.—Bohmansson gives thirty-three pages of bibliography and a full summary in English and French, with twenty-five plates. The work is based on 187 operative cases of peptic ulcer and twenty instances of bleeding ulcers treated by medical measures alone. In all the cases examined, he found evidence of gastritis independent of the gastric ulcer, and evidently preceding it. Sudden hemorrhage with chronic ulcer calls for operative intervention at once; with acute ulcer, only with vital indications. Postoperative digestion depends more on restoration of normal motor function than on the chemistry of the stomach. He emphasizes in particular the importance of sparing the circular muscle fibers, the vagus branches and the main vessels in the submucosa, which all run a parallel course in the stomach. These anatomic structures should be respected to maintain an approximately normal blood and nerve supply and motor function. This can be done best with the Billroth I.

Hospitalstidende, Copenhagen

69: 265-288 (March 25) 1926

*Functions of the Infundibulum-Tuber Region. G. Roussy.—p. 265.
Brooke's Cystic Adenoid Epithelioma. Finsen.—p. 282.

The Functions of the Infundibulotuberal Region in Relation to the Pituitary.—Roussy delivered this as the Rask-Ørsted lecture at Copenhagen, describing his personal research on the centers in this region and their influence on the metabolism of carbohydrates, water, fats, and probably on development of the genitals. Isenschmidt has demonstrated a center for heat production, and Lichtenstein centers for sweat secretion, vasoconstrictors and the bladder; Karplus and Kreide induced dilatation of the pupil with experimental lesions. The bulbar nuclei are controlled by the higher centers in the hypothalamus region. The question now is whether these centers represent the terminal station of organo-vegetative centers or whether they are under the control of the cortex, like the sensory-motor centers. The latter assumption would explain certain psychic-biologic phenomena, the unmistakable influence on the vegetative nervous system of certain emotions and mental processes. This opens a broad field for research which has scarcely been entered as yet.

Ugeskrift for Læger, Copenhagen

88: 363-388 (April 15) 1926

*Iodine and Exophthalmic Goiter. K. Petrén.—p. 363.
Indications for Mastoid Operation with Acute Otitis Media. O. Strandberg and A. Plum.—p. 369.
*Diagnosis of Brain Abscess. G. V. T. Borries.—p. 375.
*Anteflexion Impeding Delivery. K. Repholtz.—p. 378.
Orbital Abscess. B. Strandbygaard.—p. 379.

Iodine and Exophthalmic Goiter.—Petrén explains how the light thrown on this subject recently by American workers has revealed new problems as it solves old ones. As an instance of the life-saving action of iodine he describes the case of a man, aged 53, with extreme emaciation, distress and intense restlessness, day and night, of a type he had never before encountered; pulse 100-120, but no goiter, tremor or exophthalmos. The condition was so grave and progressing that cancer seemed probable, but under tentative iodine treatment the pulse dropped to 80 in a week, the basal metabolism from 75 or 60 above normal to 27.3 above and the weight progressively increased. The iodine was kept up for eleven months and displayed the same efficacy throughout, banishing the symptoms anew when they returned as the iodine was suspended or the dose (20 drops of a 5 per cent solution of Lugol's solution, three times a day) reduced. Roentgen exposures and ligation were applied as adjuvants after a time. When thyroidectomy finally became practicable; the thyroid showed the microscopic changes typical of exophthalmic goiter.

The Cerebrospinal Fluid with Otogenous Abscess in the Brain.—Borries' later experiences have confirmed his statements nine years ago in regard to the constant sterility and the clearing up of the previously turbid cerebrospinal fluid—although the other symptoms may continue a progressive course—when a meningitis is secondary to some suppurating brain lesion. This dissociation between the repeated lumbar puncture testimony and the course of the case was noted in all those in which the brain abscess was not discovered before death, and turbid fluid had been ascribed to primary meningitis.

Anteflexion of the Uterus as Hindrance to Delivery.—Repholtz pushes up the uterus with both hands, the procedure the reverse of Credé expression. As the labor pains return, the fundus has to be held in the corrected position. This may save hours of futile labor.

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TEACHING OF GASTRO-ENTEROLOGY IN OUR MEDICAL SCHOOLS *

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NEW ORLEANS

The Section on Gastro-Enterology and Proctology completes this year the first decade of its existence. The section was established in 1916, in answer to an insistent demand on the part of a constantly enlarging group of the Association membership for a specialized section covering affections of the upper and lower digestive tract. To those of us whose interest has been pledged to the advancement of the two great independent specialties represented, the event of the passing of the first milestone, so to speak, is one of no little importance. The record of the section's achievements during its initiatory period exhibits a full measure of outstanding accomplishments, both in the character and scope of the scientific material submitted, and in the evidence of the ardent interest on the part of the increasing numbers of those in attendance at our yearly sessions. Full credit and justification should thus be accorded the pioneers in gastro-enterology and proctology, who fought for a "place in the sun" for the new section against persistent and in some instances unwarranted opposition.

While the present occasion may be looked on as a fitting one for felicitation on past accomplishments, it likewise serves to focus attention on further needs for strengthening our professional standards for the future. My predecessor, in his forceful address as chairman last year, summarized the progress already achieved by the proctologists in their field, and outlined plans for future advancement in this specialty. The problems that confront the gastro-enterologist, while in many respects similar, are nevertheless cast on somewhat different lines. Gastro-enterology is itself an offshoot of clinical medicine rather than of surgery. The successful worker in this field must count as part of his equipment not only a broad knowledge of the basic sciences, but also a keenness for clinical observation that embraces an understanding of the intimate anatomic and physiologic correlation of the digestive organs to other structures within the abdomen, as well as to the body as a whole. Viewed from this angle, the status of the gastro-enterologist of today is not that of a narrow specialist in clinical medicine, as is conceived by some, a mere craftsman in the employment of tubes, buckets and other mechanical devices, but rather a highly comprehensive internist, possessing special and superior knowledge of the digestive organs and their varied ills.

What part should a well equipped and broadly visioned expert of this type claim as his right in the medical scheme of things as presently constituted? First of all, a place has already been provided for him on the medical staff of an increasing number of hospitals of this country and abroad. This applies particularly to the dispensaries or outpatient departments, in which the number of gastro-intestinal clinics has shown progressive growth within the last few years. In addition, in not a few of the hospitals, especially in the larger centers, indoor services in gastro-enterology, which function in most instances in close cooperation with the department of internal medicine, have also been created.

GASTRO-ENTEROLOGY IN GRADUATE AND UNDERGRADUATE SCHOOLS

The presence of these special hospital services, devoted to a more intimate study of diseases of the digestive tract, has likewise served to spread advancement in another direction; namely, by providing means for enhancing the scope of medical instruction in this important branch of clinical medicine. This opportunity has been utilized in the past principally by the postgraduate schools. The authorities on postgraduate education have seen the necessity for many years past of a separate department or subdepartment in gastro-enterology as an integral part of the curriculum. The plan of instruction in these schools has followed mostly the line of short courses of some four to eight weeks duration, in which the more up-to-date, detailed methods of approach in the diagnosis and treatment of digestive disorders might be presented. The very fact that such marked eagerness has been shown by graduate matriculants for the means of acquiring further knowledge in this field is striking evidence of the dearth of proper training in gastro-intestinal subjects in former periods.

A situation in most respects totally different from that which obtains in postgraduate instruction is set forth by the undergraduate school. Here, the present trend is quite distinctly and, I think in a sense correctly, away from the inclusion of the medical specialties as such in the curriculum, for the reason that they might tend to disrupt the true intent and purpose of undergraduate instruction. The ultimate aim of the undergraduate school is to turn out well trained general practitioners, equipped with a broad knowledge of the

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* Chairman's address, read before the Section on Gastro-Enterology and Proctology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

fundamental principles and methods employed in clinical medicine. Any course of study that does not conform to this particular object is not deemed applicable or desirable. No one today seriously believes that the function of the undergraduate school is to turn out specialists in medicine.

With frank acknowledgment of this fact as a basis for further discussion, what position, then, if any, might gastro-enterology put claim to in the plan of instruction in the undergraduate school? In order to obtain accurate, first hand data on the matter, I prepared a questionnaire and sent it to the deans of the eighty-nine American and Canadian class A undergraduate schools. The questions as submitted were:

> 1. Does gastro-enterology occupy an individual or special place in the curriculum of your school?
> 2. If not, are there special hours designated for the teaching of gastro-enterology, as such, in the curriculum?
> 3. Is there a chair or a subchair in the faculty designated with the title of gastro-enterology?
> 4. If the foregoing answers are negative, do future plans contemplate the establishment of a separate department of gastro-enterology, apart from that of general internal medicine?

Out of a total of eighty-nine letters sent, seventy-three replies were received. Of these, fifty-seven were from American and nine from Canadian schools. In seven of the schools, the first and second year or preclinical subjects alone were taught, so that they did not fall within the scope of the inquiry. Detailed analysis of the remaining sixty-six replies received, grouping the American with the Canadian schools, was as follows:

> To question 1, relative to provision for a special place for gastro-enterology in the curriculum, sixteen, or approximately 25 per cent, reported in the affirmative and fifty, or 75 per cent, in the negative.
>
> To question 2, constituting an alternative query concerning special hours that were devoted to the teaching of gastro-enterology apart from clinical medicine, there were thirty-five, or 53 per cent, affirmative and thirty-one, or 47 per cent, negative replies.
>
> To question 3, inquiring whether a chair or subchair of gastro-enterology had already been established in the faculty, the vote recorded was six, or approximately 10 per cent, affirmative and sixty, or 90 per cent, negative.
>
> To question 4, regarding the future possibilities of a separate department of gastro-enterology, only five of the schools answered positively, and fifty-five, negatively.

The general tone of the letters received was in all instances cordial and in some respects informative beyond the range of the questionnaire. It will be seen, from the figures quoted above, that a considerable majority of the schools are opposed to the policy of providing a special place for gastro-enterology, as such, in the curriculum. On the other hand, more than half the schools report having designated special hours for the teaching of the subject independent of the time set aside for other branches of clinical medicine. Only a relatively small number have established separate chairs for gastro-enterology or contemplate taking this step at the present time. The characteristic point of view on the subject held by the major group of schools may be summarized in the following letter, written by the dean of one of the Eastern schools:

> It is the general opinion of our teaching faculty that there is too much specializing in the subject of medicine for undergraduates; that specialism should be confined to hospital clinics, where any students desiring special information may get it; but we do not believe in chairs for these subjects, nor special teaching; all such teaching is done as a part of the general course in medicine.

Largely, as a contrast to this point of view, I quote from another reply to the questionnaire, in this instance also from a school situated in the East:

> Gastro-enterology occupies a special place in our school; it is included as one of the medical specialties in the department of medicine. The course is given during the fourth year and consists of didactic lectures, covering all the special diseases of the stomach and intestines, and clinical instruction in the University hospital and in the dispensary. The course is also open to graduate students. A full chair of professor of gastro-enterology and also assistant professor of gastro-enterology have been established.

The tenor of these two letters chosen as examples of varying points of view shows at least a rather wide divergence of opinion on the subject.

The specific objections raised by those opposed to the inclusion of gastro-enterology as a separate study in the medical curriculum may be thus classified and grouped:

> 1. The subject in its strict sense constitutes medical specialism, and the policy of the undergraduate school of today is opposed to rather than in favor of the introduction of specialties as such in the curriculum.
> 2. Clinical medicine can best be taught as a single unit without further subdivision of the branch into separate heads or titles.
> 3. The overcrowded condition of the curriculum of the third and fourth years will not permit of any place for the teaching of additional specialties, even should they prove acceptable.

FUTURE OF GASTRO-ENTEROLOGY

What might be the answer to these objections on the part of those interested in the future advance of gastro-enterology? I myself do not desire to set up an opinion of my own against the apparently settled policy of a considerable number of the thoughtful students of medical education in America. And yet, in contemplating their attitude in this instance, it would seem that much depends on the particular point of view. What, after all, constitutes a medical specialty and where should the line be drawn in the undergraduate school? Certainly, a glance through the prospectus of any class A medical school will reveal the presence in the curriculum of quite a number of definitely established, so-called specialties in medicine. General surgery, which is in itself a highly specialized study today, will be found flanked by such further highly specialized branches as gynecology, urology and orthopedics. Instruction in each of these subjects, it would seem, is given to the undergraduate student in most instances, independent of and under a separate head from that of general surgery. A similar situation prevails in respect to diseases of the eye, ear, nose and throat.

While specialization has not developed as rapidly in internal medicine as it has in surgery, still an independent status has been established within comparatively recent times for pediatrics, neurology and psychiatry, marking a separation of each from their former alliance with clinical medicine. In most instances, the medical schools have been brought to recognize the progressive advance of specialism in medicine only after a certain degree of opposition.

Gastro-enterology, following a prolonged and stormy period of development, is now in a position, I believe, to press its just claim for recognition on the curriculum of the undergraduate school. As a matter of fact, a considerable number of these schools do avail themselves at present of the services of the gastro-intestinal specialists in providing instruction in this field. More than 50 per cent of the answers to the questionnaire made frank acknowledgment of this fact. I agree fully, however, with the prevailing sentiment of the authorities on medical education that a certain concentration of authority in the major clinical branches, three or four at the most, is necessary in order to conform with the real intent of undergraduate study; namely, to turn out general practitioners of medicine. Each special subject, though treated as a distinct subdivision, should be brought under the centralized control of the departmental chief.

In the ideal type of curriculum set up by the Association of American Medical Colleges, general medicine has been made to include the following subdivisions: pediatrics, neurology, psychiatry, dermatology and syphilis. Gastro-enterology is neither mentioned nor apparently considered in this classification as an essential subdivision of medicine. Nonetheless, the fact remains that this branch is fairly entitled to recognition in the plan of undergraduate teaching, and it is equally undeniable that instruction in the subject is best given by those possessing special training and experience in this particular field of work. The omission, therefore, of gastro-enterology from the list is not, I believe, a mere oversight and should call for immediate correction.

After many years of service and personal observation in the ranks of the undergraduate school, I am of the opinion that the interest of the student in respect to the teaching of gastro-intestinal and allied subjects would be best conserved by a plan such as follows: For the first and second, or preclinical years, correlation in the study of the basic sciences should be carried out in connection with the presentation of simple clinical data relating to disturbances of function of the digestive organs. A general plan of this character has been successfully employed and its merits highly commended by Pepper, Joseph and Emerson,[1] at a recent meeting of the Association of American Medical Colleges. Throughout the entire third or junior year, one hour a week should be allotted for the presentation of the various principles and methods underlying the modern concepts of gastro-enterology. This course should include a series of discussions and demonstrations on the technic of passing the stomach and duodenal tubes, duodenal siphonage, nonsurgical biliary drainage, and proctoscopy, as likewise the clinical interpretations to be placed on gastric and duodenal functional tests, feces and other laboratory examinations, and roentgenology of the gastro-intestinal tract. The way would thus be prepared for a close up clinical contact with the digestive patient in the fourth year. Here, the class should be taught, in small groups only, the ways and means of correlating all the clinical data obtained at the bedside and in the laboratory, along with the proper evaluation of the material thus obtained. The so-called overcrowded curriculum of the third and fourth year could be made to provide a limited, though sufficient time, I believe, for the plan as outlined above, even at the expense, if necessary, of slight encroachment on other fields.

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[1] Pepper, Joseph and Emerson: Proc. Thirty-Fourth Annual Meeting, Association of American Medical Colleges, March, 1924.

THE EPIDEMIOLOGY OF POLIOMYELITIS

WITH REFERENCE TO ITS MODE OF SPREAD *

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The most widely accepted theory concerning the mode of spread of poliomyelitis is that of direct contact through the upper respiratory passages. This theory, brought out by Wickman, has received experimental support in the detection of the virus in the upper respiratory passages in active cases, abortive cases and healthy contacts, and in the infection of animals through the nasal mucosa. However, epidemiologic evidence of direct contact is scant. The proportion of cases ascribed to direct contact, made up largely of multiple cases in families, has been stated at around 5 per cent. It has been observed that the onsets of multiple cases in families as a rule so nearly coincide that they probably represent in the majority of instances simultaneous infection.[1] When allowance is made for this, the proportion of direct contact cases is reduced to an extremely small figure.

The apparent discrepancy between the theory of spread through direct person to person contact and observation in the field has been met by the assumption of a comparatively large proportion of mild forms of the disease which escape recognition, and of healthy carriers, which together are largely responsible for the spread of the virus. Grounds for this assumption are found in the well known occurrence of paralyses so slight that they often pass unnoticed, and of the abortive type of the disease, as well as by the occasional detection of the virus in the nasopharyngeal secretions of healthy persons.

There are certain facts which seem to indicate that the distribution of the virus is indeed much more widespread than is indicated by recognizable cases; namely, age distribution and serum neutralization of the virus. The age distribution of poliomyelitis corresponds closely to that of the common contagious diseases, measles, scarlet fever and diphtheria. That this is probably a function of exposure and immunization is indicated by the difference between urban and rural age distribution. In concentrated populations, the peak of incidence is at from 2 to 3 years of age, after which the decline is so marked that only a small proportion of cases occur after 10 years of age. On the other hand, the peak in rural sections occurs somewhat later, and is not as pronounced as in cities. However, the decline after the peak is more gradual, so much so that after 5 or 6 years of age the incidence is relatively greater in rural sections.

This difference in age distribution, notwithstanding the fact that the incidence of poliomyelitis is as a rule greater in small communities and in rural sections than in large cities, suggests that with concentration of population and, as has been assumed, greater person to

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* Read before the Section on Preventive and Industrial Medicine and Public Health at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

* This work was done with the support of the Harvard Infantile Paralysis Commission and the aid of a special fund privately donated to the Research Laboratory of the Vermont Department of Health.

[1] Aycock, W. L., and Eaton, Paul: The Epidemiology of Infantile Paralysis: The Relation Between Multiple Cases in the Same Family, Am. J. Hyg. 5:724-732 (Nov.) 1925; The Epidemic of Poliomyelitis in New York City in 1916, Monograph, Department of Health, New York City, 1917, p. 121.

person contact, there is a widespread distribution of the virus, resulting not in greater incidence than in rural sections, as is true of the common contact diseases, but in a widespread *immunization*. In view of the fact that there is no theoretical reason why persons in rural life should be more prone to exhibit the paralytic form of the disease, it would seem perhaps more reasonable to believe that the immunization in concentrated populations may be due to subinfective doses rather than to a mild attack of the disease. Another point in favor of this immunizing process is the viricidal property of serum from a considerable proportion of normal individuals tested. While these tests have not been done on a large scale and the limits of serum neutralization are not yet clearly defined, the suggestion is that such individuals have undergone a process of immunization. This is evidenced by the absence of viricidal action of normal monkey serum, this property being acquired only after an attack of the experimental disease or after artificial immunization.

Under this conception of the distribution of the virus, the paralytic case has been considered as a relatively infrequent form of the disease, the lack of traceable relationship between recognized cases being accounted for by the supposition of intervening missed cases or healthy carriers.

The extent of the occurrence of the abortive form of poliomyelitis is not known, and the same is true of healthy carriers. The detection of the virus has been accomplished in such a small proportion of persons tested that, from an experimental point of view, the widespread distribution of abortive cases and healthy carriers can only be hypothesized. Epidemiologic evidence does not reveal the presence of any considerable number of cases of the abortive type of the infection. In a number of instances in which there were good opportunities for the detection of such cases, little evidence of their existence was found. For example, in a camp of approximately sixty boys, three paralytic cases occurred within a week. There was no increase in the sick-call, and an examination of the entire population of this camp did not reveal any evidence of sickness that could be suspected as having been abortive poliomyelitis. In a number of outbreaks in schools, we were not able to find any trace of mild illness that could be suspected. In several instances in which mild illness prevalent in the vicinity was regarded as poliomyelitis, investigation revealed other conditions.

Observations of the occurrence of poliomyelitis in Vermont over a number of years has borne out the idea that recognizable cases seldom occur in such relation to one another that they could be considered as resulting from direct contact; and yet, on the other hand, the time and space relationships between such cases suggest a more definite relationship than is implied in the abortive case healthy carrier theory of transmission.

In a study of multiple cases in families[1] it was found that, in the majority of instances in which more than one case occurred in the same family, the onsets were so close as to suggest simultaneous infection. More rarely, some patients were found attacked at a later date—after an interval of from ten to eighteen days—indicating that they were probably secondary infections.

REVIEW OF CASES

Example 1.—Two cases suggesting simultaneous infection from thirteen to sixteen days before onset occurred in Margaret W., aged 16 (onset, Aug. 22, 1924), and Elizabeth W., aged 12 (onset, Aug. 25, 1924), sisters, who were not in contact with each other from August 9 to August 25, Margaret being away for a visit, where she developed poliomyelitis, August 22; she was brought home, August 25, the day Elizabeth developed symptoms. There was no history of contact with other cases. Although poliomyelitis was prevalent in both places, it is believed that the chances of independent origin of the two cases are slight, in view of the low incidence of this disease.

The idea of simultaneous infection is further borne out by the intervals between so-called contact cases. In New York City, in 1916, it was found that additional cases occurring in the same house but not in the same family likewise occurred in the majority of instances within such a short time of each other as to be considered coincident infection.[2] In Massachusetts, in 1916, the majority of so-called contact cases (not in the same family) had practically simultaneous onsets.[3]

Table 1.—*Data in Simultaneous Onsets of Poliomyelitis from Common Source Infection*

Year	Place	Name	Age, Years	Sex*	Onset	Time Interval, Days	Comment
1921	Woodstock....	H. L.	4	♂	Oct. 23	4	Within 2 miles; no history of contact
	Woodstock....	B. G.	25	♂	Oct. 27		
1921	Colchester.....	D. W.	5	♂	Aug. 26	1	Adjacent houses, daily contact
		F. M.	35	♂	Aug. 27		
1922	Rutland	W H.	..	♂	July 23	0	No history of contact; same city
		D. C.	..	♂	July 23		
1923	Huntington....	J. W.	9	♀	Aug. 8	2	Ten miles apart; no other case in vicinity; within 4 miles of preceding case, but no known connection
	Shelburne......	C. G.	3	♂	Aug. 10		
	Shelburne......	D. W.	14	♂	Oct. 2		
1924	Rock Island, P. Q.	Y. J.	..	♂	July 25	0	Cases 1 and 2, 20 miles apart; cases 2 *and* 3, 12 miles apart; no history of contact, but all families had done considerable motoring in same territory; no known connection with foregoing cases
	Brighton.......	D. G.	20 mo.	♂	July 25		
	W. Burke......	H. P.	4	♂	July 25		
	W. Burke......	......	..	..	Oct. ?		
1925	Elmore.........	I. H.	13	♀	Aug. 17	0	First case, one family; 2 and 3 in adjacent *family; all in* daily contact
	Elmore.........	J. R.	17 mo.	♀	Aug. 17		
	Elmore.........	R. R.	4	♂	Aug. 17		

* In this column, ♂ indicates male; ♀, female.

The following are instances of simultaneous occurrence in contacts not in the same family:

Example 2.—In Elmore, three cases, with the onset, Aug. 17, 1925, occurred, two in one family and one in the next farmhouse less than one-fourth mile away. The families were relatives and in daily contact. The nearest previous case, about 4 miles away, had occurred, August 3, fourteen days before. A visitor was at this home on the day of onset, and later visited the two families in which the three simultaneous cases occurred.

Example 3.—D. W., a boy, aged 5 years, was taken ill, Aug. 26, 1921. F. S. M., a man, aged 35, in whom the onset occurred, Aug. 27, 1921, kept a store in the *small village*, and the boy, living two or three doors away, was a regular visitor at the store. No other case occurred in the neighborhood.

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2. The Epidemic of Poliomyelitis in New York City in 1916, Monograph, Department of Health, New York City, *1917, p. 153.*

3. Infantile Paralysis Epidemic in Massachusetts, 1916, Massachusetts State Department of Health, *1919.*

Example 4.—Mrs. G., aged 31, was taken ill, Aug. 15, 1923; Bernice C., aged 9, Sept. 1, 1923, and Dorothy C., aged 15, Sept. 1, 1923. Bernice C. lived about 3 miles from the village on an isolated farm. Dorothy C., living in a city 20 miles away, visited her for about a week, returning home either one or two weeks before the two girls fell sick. Unfortunately, neither family could be perfectly sure whether the visit between these two girls ended one week or two weeks before the onset of sickness. There was no direct or indirect contact with Mrs. G., who lived in the village about 3 miles from Bernice's home. The nearest case to this group was more than 20 miles away.

These examples illustrate common source infection in contacts, as well as the interval of approximately fourteen days between cases within a short distance but not in contact.

The accompanying tables represent instances of the occurrence of two or more cases within such a short distance of each other, and at the same time so far removed from other cases that it seems reasonably certain that they constitute small localized outbreaks. In these tables multiple cases in the same family have not been included, except when such a family happens to be in a group with other adjacent cases.

Table 2.—*Data in Simultaneous Onsets of Poliomyelitis in Common Source Groups with Interval of from Ten to Eighteen Days Between Cases*

Year	Place	Name	Age, Years	Sex	Onset	Comment
1921	Grand Isle.....	E. B.	16	♂	July 14	All within radius of 3 miles; two sets of coincident cases separated by fourteen-day interval
	Grand Isle.....	H. B.	16	♀	July 18	
	Grand Isle.....	A. L.	49	♀	Aug. 1	
		M. B.	1	♀	Aug. 1	
		J. R.	14	♂	Aug. 6	
1923	Athens.........	R. H.	7	♂	Aug. 1	Two September 1 cases in contact; no contact between other cases in the group; 14 day interval between 1st and 2d cases; 17 days between 2d and 3d, and 11 days between 6th and 7th should be noted
	Wilmington....	L. G.	31	♀	Aug. 15	
	Wilmington....	B. C.	9	♀	Sept. 1	
	Wilmington. ..	D. C.	15	♀	Sept. 1	
	Bellows Falls..	S. A.	4	♂	Oct. 22	
	Putney.........	K. H.	18	♂	Nov. 22	
	Dummerston...	E. G.	12	♀	Dec. 3	
1923	Rupert.........	A. L.	8	♀	Sept. 11	First two cases, same family, third across street; daily contact; fourth case some distance away; no contact
	Rupert.........	F. L.	12	♂	Sept. 14	
	Rupert.........	G. M.	7	♂	Sept. 17	
	Rupert.........	P. T.	8	♂	Sept. 25	
1924	Sharon.........	C. B.	4	♂	Sept. 11	Second and third cases same house; daily contact; no other contact in group
	Randolph......	G. A.	21	♂	Sept. 17	
	Randolph	J. E.	Adult	♀	Sept. 29	
	Randolph......	K. B.	21	♂	Oct. 1	
1925	Calais..........	E. B.	17	♂	Aug. 3	First case 8 miles distant from group of three, and was nearest previous case; indirect contact through relative who visited first patient day of onset, and 1 week later visited other three; at no time did she show symptoms, but at this time she also visited a patient with scarlet fever, which she contracted and carried to other members of her own family
	Elmore.........	I. H.	13	♀	Aug. 17	
	Elmore.........	J. R.	17 mo.	♀	Aug. 17	
	Elmore.........	R. R.	4	♂	Aug. 17	
1925	Stowe..........	C. L.	25	♂	Sept. 19	No contact direct or indirect; first case in village; second case within a few blocks; third, about a mile away
		C. P.	15	♀	Oct. 1	
		R. P.	6	♂	Oct. 4	

These groups of cases have been divided for convenience into three tables: (1) cases with simultaneous onset; (2) those including instances of simultaneous onset as well as intervals of approximately fourteen days; (3) instances in which an interval of from ten to eighteen days elapsed between cases.[4] In this respect, the time intervals between cases in these small localized outbreaks are similar to those of family outbreaks previously referred to.

Table 3.—*Data in Instances of Poliomyelitis with Interval of from Ten to Eighteen Days Between Cases*

Year	Place	Name	Age, Years	Sex	Onset	Time Interval, Days	Comment
1921	Jericho.........	G. W.	28	♂	Oct. 1		Within two mile radius; late in season; no contact; intervals should be noted
	Underhill.......	M. N.	9 mo.	♀	Oct. 18	17	
	Jericho.........	D. P.	7	♂	Nov. 4	16	
	Underhill.......	R. T.	10	♀	Nov. 18	14	
1921	Hinesburg.....	J. M.	32	♂	Oct. 11		Last three same family; about 5 miles from first patient; first and third patients in contact
	Starksboro....	S. R.	21	♂	Oct. 20	9	
	Starksboro....	G. R.	22	♀	Oct. 27	7	
	Starksboro....	G. R.	15	♀	Nov. 15	19	
1921	Bennington. ..	R. P.	14	♂	Sept. 3		Three miles apart; no contact
	Bennington....	A. J.	21	♂	Sept. 15	12	
1922	Waterbury.....	H. H.	..	..	Oct. 12		No contact, direct or indirect
	Waterbury.....	E. M.	8	♀	Oct. 22	10	
1923	Bennington....	G. S.	5	♂	July 29		No contact, direct or indirect
	Bennington....	J. M.	13	♂	Aug. 17	19	
1925	Granville.......	O. P.	16	♂	Oct. 17		On day of onset first patient passed house of second patient and held few minutes conversation with cousin of second patient; no other case within about 25 miles
	Granville.......	C. W.	11	♀	Oct. 30	13	
1925	Middlebury....	E. B.	12	♀	Aug. 24		No contact, direct or indirect
	Cornwall.......	H. N.	20	♂	Sept. 18	18	
1925	Shaftsbury....	A. F.	10	♂	Sept. 20		Cases about 12 miles apart, but along main highway; no direct or indirect contact
	Manchester....	F. D.	6	♂	Oct. 1	11	
	Danby.........	N. W.	..	♂	Oct. 15	14	
1925	St. Albans.....	Z. L.	27	♀	Oct. 12		At time of onset of first case, second patient was visiting within a block, but returned home—14 miles—ten days before onset; no direct or indirect connection
	Milton.........	H. B.	31	♂	Oct. 30	18	
1926	Bradford......	L. T.	13	♀	Feb. 14		No direct contact, connection being as follows: *
	Bradford......	H. S.	13	♀	Feb. 25	11	

* Father of first patient killed a beef about day of onset of this case, of which he sold a quarter to father of second patient, who called for it and delivered some to his older children, who lived in a village 3 miles away, in one of whom a second case occurred—a child, aged 6, in family of second patient lived at home near that of first patient and attended same school.

In table 1 are given five instances, in addition to that cited in example 2, in which neighboring cases have occurred practically simultaneously.

Table 1 gives examples involving, it is believed, common source infection, while table 2 shows cases in which there were common source groups, as well as an interval ranging from ten to eighteen days.

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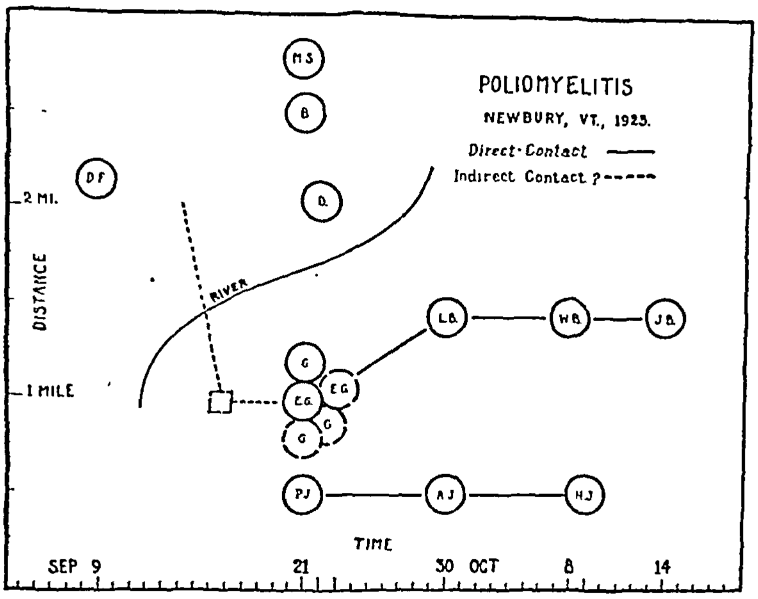
[4] This variation of eight days corresponds to the variation in the incubation period noted in experimental disease in monkeys (footnote 1, first reference).

Table 3 shows instances in which there was an interval of from ten to eighteen days between cases.

As will be seen in table 3, in none of the cases is there a history of direct contact. It would seem, then, that these cases, occurring as they do within very short distances and removed from other cases and within an apparently definite time, constitute primary and secondary cases.



Time and distance between cases in a localized outbreak: solid line circles, paralytic cases; broken line circles, nonparalytic cases; the "G" cases are all in one family.

Table 4 and the accompanying chart represent an isolated outbreak comprising fifteen cases, occurring within a radius of about 3 miles. Nine of these cases with no history of contact occurred practically simultaneously, twelve days after a previous case in the same vicinity. This suggests that the earlier case was the source of the outbreak, although we were unable to establish any relationship. From September 30 to October 14, five additional cases occurred, three of these in the B family who lived next door to the G family and were in daily contact with them. The two latter cases occurred in families in which there were previous cases.

Table 4.—*Data in Isolated Outbreak of Poliomyelitis*

Year	Place	Name	Age	Sex	Onset
1923	Piermont (N. H.)........	D. F.	..	♂	September 9
	Piermont (N. H.)........	M. S.	50	♀	September 21
	Haverhill (N. H.)........	B.	11	♂	September 21
	Newberry	G.	5	♂	September 21
	Newberry................	E. G.	8	♂	September 21
	Newberry................	G.	15	♂	September 21
	Bradford................	P. J.	4½	♂	September 21
	Piermont (N. H.)........	D.	5	♂	September 22
	Newberry................	E. G.	14	♂	September 23
	Newberry................	G.	12	♂	September 23
	Newberry................	L. B.	12	♂	September 30
	Bradford................	A. J.	27	♂	September 30
	Newberry................	W. B.	13	♂	October 8
	Bradford................	H. J.	27	♀	October 9
	Newberry................	J. B.	10	♂	October 14

Tables 1-4 comprise approximately one third of all the cases of poliomyelitis that have occurred in the state of Vermont in the period represented, from 1921 to 1926. These cases occurred in small localized groups which, according to the space and time intervals, for the most part fall into classes 1 and 3 in table 5, which is intended to show different means of transmission as indicated by time and space relationships between cases.

This study, it is believed, suggests that paralytic poliomyelitis is not infrequently transmitted from a given person to other persons within a definite range, but that transmission in such instances is not usually through direct contact between the individuals, nor through the intervention of missed cases or healthy carriers, but through some indirect means. This is illustrated by a recent outbreak, the epidemiologic evidence of which pointed to milk as the means of transmission.[5]

Table 5.—*Time and Space Between Cases in Relation to Transmission*

Space	Time	Mode of Transmission
1. Immediate associates or within limited distance	Simultaneous onset	Common source
2. Immediate associates....	Specific interval	Direct contact
3. Within limited distance..	Specific interval	Transmission through indirect means
4. Random distance........	Random time	Transmission through missed cases and healthy carriers
Sporadic cases		

ABSTRACT OF DISCUSSION

Dr. J. P. Leake, Washington, D. C.: Dr. Aycock's plan seems of great promise in its probability of advancing our knowledge of the spread of poliomyelitis, particularly in cases such as these, which can be followed much better than in a crowded community. I wish to call attention to the following of a somewhat similar plan in the Elkins, W. V., epidemic of the winter 1916-1917, the report on which is buried in the literature and somewhat forgotten. Dr. Smith, Dr. Bolten and I were able to prove definitely that insect transmission cannot be a necessary factor in the spread of infantile paralysis. We also showed, somewhat in line with some of Dr. Aycock's work, that in cases which might be called abortive, the symptoms tend to be referred to the digestive tract. So much for real evidence. There are other suggestions which the following, out of a series of such more or less isolated epidemics, does give one. Dr. Aycock has mentioned the failure to find abortive cases in many instances. I think any one who has studied intensively many epidemics has found that to be true; certainly, in some epidemics abortive cases are very difficult to discover and one cannot by means of such cases account for the spread of the disease. We must either assume healthy carriers or some other intermediary. The suggestion Dr. Aycock has given here and in other papers about the possibility of invasion by way of the digestive tract is worth bearing in mind. I was also interested in his last diagram of cases in which the father from the family across the river did the visiting and was presumably the healthy carrier. Repeatedly there have been suggestions, in studies that I have had occasion to make, of this very thing, that the adult male member of the family is likely to be more dangerous than others.

Dr. W. L. Holt, Little Rock, Ark.: I investigated an epidemic of poliomyelitis in a suburb of Newark, N. J., in the summer of 1916, when there was a big epidemic in New York state. It started in Brooklyn. We had twenty cases in our town during the summer. I investigated the best I could and was much surprised that I could trace hardly any cases to personal contact with others, there rarely being successive cases. It was certainly a place in which the population was very evenly distributed over the area. I do not think that there was more than one case in a family, and in the very small slum district there was one fatal case with many children exposed and no secondary case resulting. Also, the first case was on the side of town toward Newark. There were a great many cases in Newark before we had our first case. The father of this first patient worked in Newark. The child had not been in Newark, nor had any one else in the family, except the father. Of course, we knew very much less about poliomyelitis in 1916 than we know now, but it is the general belief of health officers now that this epidemic was spread a great deal by the healthy adults who became healthy carriers.

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[5] Knapp, A. C.; Godfrey, E. S., and Aycock, W. L.: An Outbreak of Poliomyelitis Apparently Milk Borne, J. A. M. A., to be published.

Dr. I. D. Rawlings, Springfield, Ill.: Any one who has had much experience with poliomyelitis is struck by the infrequency, relatively, of the secondary cases among direct contacts. In 1916, in Chicago, we became very much excited over the horrible situation in New York, with so many persons dying of the disease, and we took very stringent precautions through cooperation of the public health service and the local authorities in New York. We were advised of every person who left New York for Chicago who might possibly have been exposed. We immediately isolated these people and kept them under observation. When such persons went beyond Chicago, we notified the health officers of their home towns. Cases occurring in our vicinity, with no direct contact traced from New York, were treated in the same way. Every patient with poliomyelitis was hospitalized immediately and all contacts were put under quarantine for sixteen days. We had about 285 cases of poliomyelitis in Chicago in 1916, and 525 in 1917, and there was an average of three direct contacts to each of these cases. Every patient was taken out of the home and hospitalized, but the contacts under 16 were kept in the home for sixteen days, so there were approximately 1,500 direct contacts, and yet but one possible case occurred among them. Also among the large number of people that came from New York and other infected areas not a single case occurred. One is constantly struck with the fact that there are relatively few contact cases. We thought we had three secondary cases in a family in which there had been a case of poliomyelitis. They were reported as positive cases and were taken to the hospital. The final diagnosis in all four cases was trichinosis. I wonder whether in these rural areas referred to by Dr. Aycock the diagnoses were confirmed. We find in Illinois that quite a number of cases reported as poliomyelitis are not poliomyelitis when carefully investigated. The milk-borne epidemic described is very interesting. The Chicago commissioner of health found that in New York very few cases, if any, occurred among children who were using pasteurized milk distributed through the Nathan Straus infant welfare clinics. That gave him the idea that possibly milk had something to do with the epidemic; so an executive order was issued that all milk distributed in the city of Chicago must be pasteurized, and up to 1922 a large percentage of the milk supply of Chicago was pasteurized.

Dr. A. C. Nickel, Rochester, Minn.: I should like to emphasize the fact brought out by Dr. Aycock concerning the occurrence of sporadic cases of poliomyelitis. Last summer, Dr. E. C. Rosenow and I saw about fifty-five cases of poliomyelitis within a radius of 75 miles of Rochester, and frequently we would see a case in a very secluded spot where contact infection was quite unlikely. In such cases Dr. Rosenow was able to get the same positive precipitin reaction from the nasopharyngeal swab as from practically every case in the epidemic zone. By this means Dr. Rosenow feels that he can diagnose the presence of the poliomyelitic streptococcus in the throat, and its presence in the throats of sporadic cases seems to be against the contact theory of infection. For example, in Rochester, during the epidemic, a family came home from a two weeks' vacation. We obtained a nasopharyngeal swab from the entire family the day they returned, and all were negative. The children were not allowed to leave the house, and although the father went out several times he did not come in contact with any families having the disease. However, in less than a week the entire family was positive to the precipitin test, and two weeks after the epidemic their precipitin test was again negative. Such facts seem to suggest possibilities concerning the diagnosis and epidemiology of poliomyelitis.

Dr. W. F. Draper, Washington, D. C.: I should like to ask Dr. Aycock to outline what measures, if any, he would recommend health officials to take for the control of the spread of the disease and the protection of other people.

Dr. W. L. Aycock, Boston: Dr. Leake mentioned healthy carriers. In typhoid, a carrier sooner or later comes to be suspected by reason of his being associated with repeated cases. My experience with poliomyelitis has been that frequently a healthy person has been associated with two cases in the same localized outbreak, but we never find the "healthy carrier" associated with repeated cases. He must be regarded more as a transmitter of the infection and not as a chronic carrier, as in typhoid. I think it must be borne in mind that when poliomyelitis occurs in small foci, it is not very difficult to find among the local population the "healthy carrier" pictured. Dr. Holt mentioned diagnosis. Practically every case of poliomyelitis that has occurred in Vermont since 1914 has been verified by the state department of health. We make it a practice to see every suspected case as soon as it is reported. Most of the cases show some paralysis; others, as a rule, are cases in which spinal puncture was done and cell counts were made. Milk was mentioned in connection with the Cortland, N. Y., outbreak. I hope I have not given the impression that it is a major factor in the spread of the disease. Milk can hardly be responsible for any very considerable proportion of cases of poliomyelitis. It may be regarded as one of the several modes of spread. In regard to the precipitin test, some simple test which would give some indication as to presence of the virus of poliomyelitis would further our knowledge of the epidemiology of the disease very much. As to measures for the prevention of poliomyelitis, I think of it now as a disease that may be spread in a number of ways. I prefer to take, perhaps first of all, something like typhoid precautions. Dr. Leake's emphasis on the gastro-intestinal route mode of spread is well worth considering. We should institute precautions against contact spread, upper respiratory secretion spread and the gastro-intestinal, not forgetting such things as house flies and raw food that may be contaminated. As for insect hosts, if we find a few more milk-borne epidemics it will go far to rule out that possibility. It would, indeed, be unusual if poliomyelitis could spread through milk and through insect hosts.

A Sterilizable Dialyzing Membrane.—Tests by medical authorities show that the use, as a sterilizable dialyzing membrane, of a new synthetic cellulose product (used principally for wrapping) will probably make practical a whole field of bacteriology as yet hardly explored. Donna E. Kerr and Dr. H. W. Hill, director of the Vancouver General Hospital Laboratories, made these tests, which are described in part in the *Vancouver Medical Association Bulletin* for February: "In searching for a sterilizable dialyzing membrane, a suggestion came from the Christmas boxes of candy wrapped in glistening sheets of 'paper.' The resemblance of this material to thin sheets of collodion induced me to try its dialyzing powers, which, for silver nitrate, sodium chloride and glucose, proved perfect. The next step was to test its resistance to sterilization. Fifteen pounds of steam for twenty minutes in an ordinary laboratory autoclave left it unchanged in appearance, feel, etc. Its dialyzing powers were still unaffected. The various uses of such a membrane in physics, chemistry, and especially in bacteriology and biology, both scientific and applied, are obvious and need not be enlarged on here. With any household cement, sheets of it may be made into tubes, flat, square or round bags, etc. Diaphragms of it may be cemented across bowls, beakers or glass tubes. So far as we have been able to discover, this material, known as cellophane, has not been previously advocated as a sterilizable dialyzing membrane."

THE ETIOLOGY AND TREATMENT OF PERNICIOUS ANEMIA *

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A paper on this subject might, if one were pessimistically inclined, be composed of two sentences: (1) We do not know the cause of pernicious anemia, and (2) we do not, as yet, possess a cure for this disease. Though these two statements are literally true, to make them without qualification would in the existing state of knowledge be very misleading. For, as I shall attempt to show, not only have important steps toward an understanding of the etiologic factors that must be concerned in the origin of this remarkable disease been made, but also we are already in possession of a number of therapeutic measures (ameliorative and perhaps remission productive, even if not actually curative) that may advantageously be applied to patients manifesting pernicious anemia. Moreover, with the growth of our knowledge of etiology and of pathogenesis, the paths that must be followed if we are to lessen the incidence of this serious disease are, I believe, coming more clearly into view.

RESTRICTION OF THE TERM "PERNICIOUS ANEMIA"

Though any severe anemia that progresses to a fatal issue merits the designation pernicious, for the purposes of this paper the term pernicious anemia will, as is now customary, be understood to refer only to the well known and definitely characterized Addison-Biermer type of chronic hemolytic anemia. It will not, therefore, include any of the other severe anemias, such as the primary aplastic anemias, the grave forms of so-called secondary and symptomatic anemias (after hemorrhage, during sepsis, with neoplasms, in the leukemias, or in chronic hemolytic jaundice).

The disease we are considering, though somewhat variable in its course, duration and response to therapy, presents, when fully devoloped, one of the most sharply marked clinical pictures known to nosographers, provided the general clinical symptoms, the course and the blood findings are all given due consideration. The severe anemia of insidious onset, the straw-colored tint to the skin, the asthenia, the slight fever, the disturbances of the digestive tract (sore tongue, achylia gastrica, and intestinal symptoms), the urobilinuria, the paresthesias of the hands or feet and other nervous symptoms pointing to disturbed function of the posterior and lateral columns of the spinal cord, together with a blood picture indicative, on the one hand, of increased blood destruction (anemia, leukopenia, reduction of the platelets and bilirubinemia) and, on the other, of increased blood formation but with reversion to the embryonal type (relative hyperchromemia, as shown by the high color index, megalocytosis, microcytosis, poikilocytosis, and the regenerative phenomena of polychromasia and erythroblastosis, particularly megaloblastosis) and a course that, though marked by the occurrence of exacerbations and remissions, is on the whole progressive, leading ultimately (after years or perhaps decades) to a fatal issue despite any form of therapy thus far discovered—these criteria are so clean-cut and so distinctive that they not only make the diagnosis easy, at least when the disease is full-fledged, but they also point to a unitary disease entity, for which the principal etiologic factor or factors at least must be constant, rather than to a mere clinical syndrome that could be due in different instances to principal pathogenic factors that are different and distinct from one another. Even in incipient cases in which the disease is still relatively latent, and in certain advanced cases in which through exhaustion of the bone marrow the blood picture may simulate that of an aplastic (or an aregeneratory) anemia, careful weighing of the clinical and hematologic evidence available will nearly always make it possible to assign the process to its proper nosological position.

MAIN FACTS TO BE ACCOUNTED FOR IN SEARCHING FOR THE CAUSE OR CAUSES OF PERNICIOUS ANEMIA

When the etiology of a disease is obscure, progress in the study of its causation will depend on (1) a careful collection of the facts bearing on the symptoms—the course of the disease (treated or untreated), the findings at necropsies on patients dead of the disease, the external conditions in which the persons who develop the disease have been immersed from the beginning of life on, and the internal conditions that may be ascribed to the heredity of such persons; (2) the arrangement of the facts in various ways with a view to the discovery of any probable relationships existing among them; (3) the brooding over the facts thus collected and arranged and of similar facts in other disease conditions in order that, through the imagination, solutions of the etiologic and pathogenic problem may occur to the mind; (4) the determination by a process of reasoning (deduction) of the implications of any tentative suggestions of solution that are entertained in order that the actual facts previously gathered (or these extended by further observation and experiment) may be compared with these implications for identities and discrepancies; and (5) the acceptance or rejection of the various tentative hypotheses formed according to the corroborative or refutative significance of such identities and discrepancies.

Among the main facts thus far collected in the domain we are considering may be mentioned the following:

1. A study of the incidence and distribution of the disease indicates that:

(*a*) It occurs in all countries of temperate climate but seems to be rare in the tropics, unless the severe anemias present in some patients suffering from sprue should be proved to be instances of true pernicious anemia.

(*b*) Pure negroes are rarely if ever affected by it.

(*c*) If only the so-called cryptogenic cases are considered, they make up from 0.2 to 0.45 of the white hospital population.

(*d*) Among white patients with pernicious anemia who enter hospitals, there are somewhat more men than women in Anglo-Saxon countries and somewhat more women than men in Germany, Finland and Scandinavia.

(*e*) The disease occurs apparently indiscriminately among the rich and the poor, among bodily laborers and mental workers, and among urban and rural dwellers, though it has been asserted that there has been a marked increase of its incidence in certain parts of central Europe since the Great War.

(*f*) It is distinctly a disease of later life, not occurring in childhood or during adolescence, and rarely between 20 and 30, but then increasing steadily in incidence during each quinquennium (in ratio of the number of cases to the number of persons of the same age alive) up to the age of 70.

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* Read before the Section on Practice of Medicine at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

(*g*) The disease is more common in certain families than in others, occurring in several lineal or collateral members of such families and occasionally in each of three successive generations by lineal descent.

2. A study of the anemia itself (which, like every other anemia, involves a failure of the equilibratory mechanism that normally makes blood formation keep pace with blood destruction or blood loss) indicates that:

(*a*) The disease is characterized both by an abnormally increased blood destruction (most marked during exacerbations of the disease) and by increased blood formation (though of anomalous type), at least until the hematopoietic function has become exhausted by the greatly increased demands made on it.

(*b*) The increased blood destruction occurs within the body itself, and mainly, if not wholly, through a process of chronic hemolysis carried on within the macrophages of the reticulo-endothelial system (spleen, liver, bone marrow and lymphadenoid tissue).

(*c*) This increased blood destruction is responsible for the bilirubinemia, the increased bile pigment in the feces, the urobilinuria and urobilinogenuria, the subicteric tint to the skin and sclera observable during life, and the siderosis of the organs at necropsy.

(*d*) The decrease in the number of the red corpuscles in the blood is accompanied by a decrease in the total number of white corpuscles present (leukopenia) dependent mainly on a reduction of the absolute number of polymorphonuclear neutrophils present (aleukia with relative lymphocytosis).

(*e*) There is also a reduction in the number of blood platelets (thrombocytopenia) with prolonged bleeding time, despite which there is, according to some observers, increased coagulation capacity of the blood and increased concentration in the blood of the coagulation ferment.

(*f*) The increased blood formation (regeneration) is revealed by the presence of immature red cells in the blood (erythroblasts, diffuse and punctate basophilia and Cabot's rings) and, as postmortem examinations have shown, by the replacement of the yellow marrow of bones by red marrow.

(*g*) The regenerative bone marrow response is of a peculiar kind, resembling the type of blood formation encountered in embryonal life, resulting in the presence in the blood of megalocytic red corpuscles (25 per cent or more of the red cells), of hyperchromic red corpuscles (accounting for the darker color of the individual red cells in fresh blood smears and for the high color index), and of megaloblasts as well as of normoblasts (both forms of erythroblasts often appearing in the blood in very large numbers during so-called blood crises).

(*h*) This form of bone marrow response may be demonstrable in early stages of the disease before the anemia develops (when the hemoglobin is still as high as 98 per cent of normal) and at later stages of the disease during remissions that may have led to the false idea that a cure of the disease has been effected.

3. A study of the structure and functions of the organs and organ systems (aside from the blood, the blood building organs, and the blood destroying tissues) in pernicious anemia indicates that:

(*a*) In the digestive apparatus, soreness of the mouth and tongue, associated with redness of the lingual and buccal mucosa and atrophy of the filiform lingual papillae, is very common. A marked tendency to gingivitis, dental caries, and apical periodontal infections exists; achlorhydria gastrica (usually total achylia) is constantly demonstrable; disturbances of intestinal motility and secretion are common; the bacterial and other mycotic flora of the gastro-intestinal tract (especially of the small intestine) may show marked deviations from the normal; to the fauna of the intestine there may, in some cases, be notable additions (*Bothriocephalus* or other worms and amebas); and at necropsy atrophies of the gastro-intestinal mucosa have been encountered as well as multiple inflammatory foci in the mucosa, more rarely narrowing of the lumen, and occasionally neoplasms.

(*b*) Within the nervous system, combined degenerations of the posterior and lateral columns of the spinal cord frequently occur, usually after (but sometimes before) the appearance of the characteristic anemia, and give rise to paresthesias and anesthesias, and sometimes to more or less outspoken motor and sphincter disturbances.

(*c*) In the endocrine and metabolic domains, there appear to be certain disturbances; some of these have been ascribed to disorders of function of the hypophysis, the thyroid, the suprarenals and the gonads, though it must be admitted that the signs and symptoms thus interpreted are but rarely sufficiently pronounced to permit of indubitable explanation; and a similar vagueness characterizes the results of studies of metabolism of proteins, carbohydrates, fats, lipoids, water and mineral salts in pernicious anemia.

(*d*) In the general bodily configuration, there have been observed certain peculiarities of the head (e. g., wide lower face, wide jaw angles, very large interpupillary space), the trunk (e. g., short chest and long abdomen) and of the extremities (e. g., length above the average).

4. A study of the therapy of cryptogenic pernicious anemia indicates that:

(*a*) The application of any one of a whole series of different forms of therapy, as shown below, may be followed by, and probably may favor, the occurrence of a remission of the disease process, so that the anemia may for a time largely disappear and the general health be greatly improved.

(*b*) Such remissions also occur spontaneously, in the absence of any therapeutic intervention.

(*c*) The duration of remissions is extremely variable (from a few weeks to several years), as is also the number of remissions that occur in different patients.

(*d*) Ultimately, unless earlier cut short by intercurrent disease, an exacerbation of the malady leads, despite the most diligent and skilful treatment, to a fatal termination.

CERTAIN HYPOTHESES THAT ATTEMPT TO EXPLAIN THE ETIOLOGY AND PATHOGENESIS OF PERNICIOUS ANEMIA

To discuss all the hypotheses that have been suggested, or even the more important ones in their full details, would vastly exceed the necessary limits of this paper. Accordingly, only the principal hypotheses will be mentioned, and my discussion of these will, perforce, be brief.

All patients, like all healthy people, are in the biologic sense to be looked on as human phenotypes; that is to say, as persons whose structures and functions have resulted from the interaction of materials and capacities inherited from their parents (in the fertilized egg cell, or zygote) on the one hand, and of materials and influences in the environment, on the other.

Each human phenotype (healthy or diseased) at any given moment consists, then, of two parts: (1) a part acquired through inheritance—the so-called genotype—and (2) a part acquired from the environment—the so-called paratype. These terms have a precise biologic meaning and will, I hope, be used in preference to vaguer terms. If the term constitution be used, its user should make clear whether he intends the word to mean the whole phenotype, in which he would distinguish a genotypic part from a paratypic part of the constitution, or merely the genotype to the exclusion of the paratype. Similarly, when the terms endogenous and exogenous are applied to causes and conditions, they are used in different ways by different writers; for some, an "endogenous cause" means a cause of genotypic origin, and an "exogenous cause" means a cause arising in conditions external to the genotype, whereas, for others, an endogenous cause may mean merely a cause originating within the phenotype and an exogenous cause one external to the phenotype at the time it exerts its influence. Even in discussions of the etiology of pernicious anemia in medical literature, there are many references to "constitutional" and "environmental" influences, to "endogenous" and "exogenous" causes, and it is often very difficult to understand just what the authors have meant by the terms that they used. For the sake of clarity, therefore, in what follows I shall make use of the terms "phenotype;" "genotype," "paratype" and "external conditions" in the senses in which they are now usually employed by biologists and geneticists.

The "pathologic phenotype" that we know as a "patient suffering from pernicious anemia" must owe its pathologic state (1) to an abnormality of the genotype, (2) to injurious external conditions acting on a phenotype of normal genotypic content, or (3) to both abnormality of genotype and certain injurious external conditions. Each of these three conceptions of etiology is easily recognizable in current discussions of the topic.

Most of the hypotheses of etiology regard the disease as an intoxication, the poison injuring not only the blood itself and the organs of blood formation and of blood destruction, but also a whole series of other organs (the digestive apparatus, the nervous system, the circulatory apparatus, kidneys and endocrine apparatus). That the blood serum in pernicious anemia is toxic has been shown by the phytotoxic experiments of Macht. But some seek the source of the "intoxication" in conditions external to the phenotype; others seek it within the phenotype itself (autointoxication) and attribute it to the inheritance of a pathologic genotype, while still others conceive of an intoxication that occurs only when inherited predisposing factors are combined with releasing factors that originate outside the phenotype. Here again the terms intoxication and autointoxication are often loosely and ambiguously used. Thus, for example, some conceive of the intoxication as due to the presence in excess of one or another of the normal constituents of the body; some would reserve the term for poisonings due to chemical substances not normally present in the body, and still others would extend the meaning of the term intoxication to include injurious influences dependent on a deficiency of substances normally present; for example, the increta.

HYPOTHESES OF ETIOLOGY ASSUMING PROVOCATIVE OR RELEASING FACTORS ORIGINATING IN THE ENVIRONMENT

The investigators who have conceived of an external source for the hypothetic poison of pernicious anemia have inclined to the view that this poison must be absorbed from some part of the digestive tract, and most of them have thought that it is formed somewhere within the alimentary canal.

Thus, because of the frequency of glossitis and of infections of the teeth and gums, English students of the disease have advanced the oral sepsis hypothesis of etiology. They regard the mouth infections as streptococcal and the general intoxication as due to streptococcus toxins. They explain the findings of streptococci in the duodenum and of inflammatory foci in the gastro-intestinal mucosa as being due to the achylia gastrica, since the loss of the natural hydrochloric acid barrier permits streptococci of oral origin to pass through the stomach unscathed. This conception of the etiology of pernicious anemia has not, as yet, met with general acceptance.

Again, because of the occurrence of pernicious anemia in persons who are infected with tapeworms (especially *Bothriocephalus latus*), Finnish investigators have thought that these worms themselves might be the source of the hypothetic poison, especially as a part, though not all, of the patients who suffer from "bothriocephalus anemia" get well after expulsion of the parasites. Out of this conception grew the lipoid hypothesis and the bothriocephalin hypothesis of the etiology of the anemia in worm carriers. But, besides the facts that only about 1 per cent of all persons infected with *Bothriocephalus* develop pernicious anemia and that those who do develop it may harbor only one or two tapeworms, whereas carriers of from seventy to ninety worms may remain free from the disease, experimental work with extracts of the worms and with lipoids from other sources has failed to corroborate these hypotheses.

An enterogenous origin of the poison of pernicious anemia has further been sought in an alteration of the flora of the intestinal contents; thus arose the intestinal flora toxin hypotheses, including the "pathologic *B. coli* strain conception," the "gas bacillus conception," the "*Monilia* of sprue conception" and other suggestions based on an intoxication of bacterial or mycotic origin within the intestine. None of these conceptions seem to me to have been supported, as yet, by sufficient facts. That any one of the influences mentioned may be of some importance as a contributing etiologic part factor may well be admitted, but the principal etiologic factor must, it would seem, be sought elsewhere.

HYPOTHESES OF ETIOLOGY ASSUMING PREDISPOSING OR DETERMINING FACTORS ORIGINATING WITHIN THE GENOTYPE

During the recent past, particularly since the revival of interest in constitutional pathology, the occurrence of pernicious anemia in several members of one and the same family in one or two generations (in one instance, in no less than three generations of lineal descendants) has attracted increasing attention. That such familial incidence of the disease points to an actual inheritance of a disposition to the disease rather than to an exposure of the members of the family in common to certain injurious external conditions has received considerable support. Thus, in certain instances in which a household consisted partly of blood relatives, partly of persons of different stock, two or more of the former suffered from pernicious anemia, whereas none of the latter did so. Again, members of the same family have been known to develop this disease at different times or while living in different places. Moreover, there seems to be no evidence of any tendency to endemic incidence of the disease, unless the somewhat increased frequency of occurrence in tapeworm infested regions is so regarded.

A study of family trees in which pernicious anemia has occurred in more than one case (and especially in which lineal descendants have been affected through two or three successive generations) has given rise to the hypothesis that the disposition to the disease may depend on a mendelian dominant, perhaps on the hereditary transmission of a single pathologic id or gen. But if so, why should not familial incidence of pernicious anemia be more striking than it actually is? Ought not half or nearly half of all the members of the family be affected? Those who support the view of such hereditary disposition explain the small number of cases observed in affected families (1) by the fact that, since pernicious anemia is a disease predominantly of later life, many members of affected families die before the disease becomes manifest; (2) by the probability that many mild and atypical cases are overlooked, and (3) by the possibility that, in addition to the inherited disposition, certain releasing factors resident in external circumstances are also necessary in order that the disease shall become manifest, the phenotype remaining apparently healthy (despite its carrying the pathologic genotype constituent), because of the lack of this releasing factor or factors. For a time it was hoped that, by the "method of statistical summation" or so-called "kin-incidence method," the average incidence of the disease in a single generation might be determined and compared with the theoretical mendelian proportions; but, thus far at least, especially because of the late time in life in which the disease becomes manifest, the difficulties of application have been insuperable. The study of mendelian heredity experimentally in animals and plants is a wholly different matter from its study by observational and statistical methods in man.

Even if the occurrence of pernicious anemia should be proved in the main to be due to the inheritance of a genotypic disposition thereto, the actual pathogenic skein would still have to be slowly unraveled. It would be necessary to determine, for example, whether this genotypic disposition led to a primary inferiority of the bone marrow, or to a primary hyperactivity of reticulo-endothelial blood destruction, or to primary endocrine or neural disturbances that in turn remove inhibitory influences from the blood destroying apparatus or determine the peculiar form of response of the blood building apparatus. The relations, too, of the achylia gastrica, of the glossitis and defective teeth, of the funicular myelopathy, and of the general bodily configuration to the genotype would demand investigation: for the blood picture in pernicious anemia is only a single part of the larger symptom complexes that characterize this remarkable disease entity.

HYPOTHESES OF ETIOLOGY THAT ASSUME A COMBINATION OF GENOTYPIC FACTORS WITH FACTORS IN THE EXTERNAL CONDITIONS

Among those who lay greatest stress on factors in the external conditions (parasites, bacteria) as causes of pernicious anemia, there are many who admit also the significance of an inherited disposition that expresses itself in various ways (achylia; abnormal permeability of the mucosa of the digestive tract to toxic substances and "disease-readiness" of the bone marrow, of the reticulo-endothelial system, of the spinal neurons, or of the endocrine apparatus). The tendency at the moment seems to be to place the emphasis in etiology on genotypic main factors within the phenotype and to regard the factors in the external conditions as merely subsidiary or accessory part factors that release or provoke.

Some have gone far in speculation as to the possible chain of events in pathogenesis. Recently, a diminution of the internal secretion of the suprarenal cortex has been assumed to exist, and this hypofunction is looked on as removing the brakes from the phagocytic destructive activity of the reticulo-endothelial system, and to the latter an inferior bone marrow is assumed to respond by reversion to an embryonal type of blood formation, perhaps in the circumstances the most purposeful form of response. Others see in the changed type of blood formation a congenital inferiority of the erythropoietic apparatus, which gives rise to the production of red cells that are preternaturally vulnerable either to phagocytic engulfment and intracellular hemolysis or to hemolysis by toxins absorbed from the gastro-intestinal tract or other foci of parasitic invasion or of bacterial infection. Such bold speculations should not be valued at more than they are worth; they are useful only as they stimulate investigators to new and more precise observations or to experimental research.

TREATMENT AND PREVENTION OF PERNICIOUS ANEMIA

From what has been said of etiology and pathogenesis, it will be obvious that our ignorance is as yet too great to permit of the application of any entirely satisfactory causal therapy. If the main causative factor lies in an inherited disposition, it is conceivable that, in time, selective eugenics may be called on to lessen the transmission of the pathologic genotypic pattern. Even now, the intermarriage of members of families known to be subject to pernicious anemia might well be discouraged. Moreover, even in persons who are carriers of the predisposing gens, the disease actually becomes manifest only in a few. As our knowledge progresses, we shall doubtless discover why it remains latent in some who are disposed to it and why it comes to realization in others; and we may then find ways to support the inhibiting factors on the one hand, or to combat the releasing factors on the other, so as to maintain latency. Already something in this direction may, perhaps, be accomplished in families known to be susceptible by attention to measures that prevent the process of premature aging, especially through general bodily and mental hygiene, and the prevention or early treatment of oral sepsis and of intestinal parasitism. Recognition of the existence of glossitis or achylia gastrica, of abnormalities of intra-intestinal flora and fauna, of paresthesias suggestive of beginning funicular degeneration of the spinal cord or of megalocytosis before anemia develops may permit of the prompt application of a therapeutic regimen that will retard, if it does not wholly prevent, the development of more serious symptoms. Whether or not extracts of suprarenal cortex may prove valuable remains to be tested.

Unfortunately, the onset of the disease is so insidious that in most instances physicians are not consulted by the patient until the malady is fully manifest. The attempt has then to be made to bring about a remission and to maintain it. Since spontaneous remissions occur, there has been and still is great difficulty in determining the part played by therapy in the promotion of remissions. There are certain measures, however, that are now generally believed to be helpful, and on these I shall here lay most stress.

Bodily and Mental Rest.—The symptoms in pernicious anemia seem definitely to undergo exacerbation through fatigue, either of body or of mind. A period of rest in bed (thus compelling cessation of muscular exertion) and of protection from mental and emotional strains seems often to exert a favorable effect. During this period, care by a well trained nurse and massage skilfully applied are advantageous.

Removal of Foci of Infection and Expulsion of Intestinal Parasites.—The thorough treatment of pyorrhea alveolaris, the removal of areas of apical periodontal sepsis, and the expulsion of tapeworms and other parasites from the intestines may get rid of accessory causative factors and favor the occurrence of a remission. Discretion should, however, be used in the treatment of other possible foci of infections; radical surgical intervention for merely suspected infection of tonsils, gallbladder or appendix may do more harm than good in pernicious anemia.

Administration of Hydrochloric Acid.—Large doses of dilute hydrochloric acid (1 or 2 drachms [4 or 8 cc.] in a glass of water containing also the juice and pulp of an orange, thrice daily) may be given as a substitutive therapy because of the gastric achlorhydria. This acid therapy promotes more normal digestion, both in the stomach and in the intestines, and probably helps to keep the flora of the small intestine more nearly like that of persons who do not have achylia gastrica.

Establishment of an Anus Praeternaturalis or of Colonic Exclusion.—So convinced are some of the enterogenous origin of pernicious anemia that they recommend the making of an anus praeternaturalis or the exclusion of the colon by anastomosis of the ileum with the sigmoid. Prolonged irrigations of the colon for the removal of the hypothetic toxins is also often urged. The results thus far obtained would scarcely seem to justify the use of these surgical methods.

Blood Injections and Blood Transfusions.—Small quantities of human blood injected intramuscularly seem in many cases to be of benefit. Better still, the intravenous injection of from 200 to 500 cc. of blood from a suitable donor (infection free; of the same group as regards iso-agglutinins and cross matched with the blood of the recipient) may be made weekly until the hemoglobin reaches 85 per cent of normal. If a careful technic is employed, such transfusions are usually well borne. The beneficial results produced are often truly remarkable. The appetite improves, the patient feels stronger, and his general appearance quickly reveals progress toward a healthier state. Not only does the transplanted blood appear to substitute for the blood destroyed; it seems also to do something toward restoring the equilibrium between blood destruction and blood regeneration in the patient. At any rate, experience indicates that remissions of shorter or longer duration are frequently obtained by means of such transfusions.

Administration of Arsenic.—Solution of potassium arsenite (Fowler's solution), Asiatic pills, arsphenamine and arsacetin seem to be of value in favoring a remission. Recently, the arsenical shock treatment —the administration by mouth, or by subcutaneous injection, of a few large doses of arsenic—has been applied, in some instances, apparently with strikingly good results. How the arsenic acts is doubtful. Most physicians look on this drug as a stimulant to the blood building tissue, but is this tissue not overstimulated at all times in pernicious anemia? Because of its toxicity, I have wondered whether arsenic may not produce its good effects rather by inhibition of phagocytic activity within the reticulo-endothelial system. The administration of iron seems to be of no value in pernicious anemia.

Applications of Roentgen Ray, Radium and Thorium X.—These have been tried in patients in whom arsenical treatment and blood transfusions have not helped. I have not used them. The reports in the literature are not wholly convincing of their efficacy.

Splenectomy.—Treatment of pernicious anemia by splenectomy has, in some cases, been followed by a remission. It has been recommended especially when the spleen is large and when the process of blood destruction is very active, as shown by increased urobilinuria and bilirubinemia. If it exerts a good effect, it is probably because of removal of an important part of the reticulo-endothelial system, with corresponding reduction of blood corpuscle phagocytosis.

Other Measures.—A well balanced diet (suited to the patient's bodily and mental tasks and his caloric and vitamin requirements), bitter tonics to promote appetite when there is anorexia, a glass of sound wine with the principal meal "for the stomach's sake," cod liver oil after meals, residence preferably at a moderate altitude in an equable climate, where sunshine is abundant and sojourn in the open air is pleasant, cheerful surroundings, and as much encouraging psychotherapy as can conscientiously be administered—any or all of these may help to turn the scale in the direction of improvement.

SUMMARY

1. Though the causes of pernicious anemia are not yet fully known, clues to their nature are being obtained.

2. In any consideration of etiology, due attention should be paid to the peculiarities of incidence and distribution of the disease; to the fact that it is predominantly a malady of middle and later life; to the characteristic features of the blood picture and their relations to blood destruction within phagocytes and to blood regeneration of embryonal type; to the associated disturbances of the digestive, nervous and endocrine systems; to certain special marks in the bodily configuration; to the occurrence of spontaneous and of therapeutically inducible remissions of variable duration, and to the inevitability, in the present state of knowledge, of a fatal termination.

3. Of the many conceptions of etiology that have been advanced, the evidence at present favors hereditary (genotypic) predisposition as the main factor and various influences in the external conditions (especially poisons derived from bacteria, fungi or animal parasites in the digestive tract) as accessory releasing or provocative factors.

4. Parallel with the growth of hypotheses of etiology, conceptions of pathogenesis are being extended; the causes of the disturbances of equilibrium between blood destruction and blood regeneration (and their antecedents) are becoming clearer; the anemia is recog-

nized as only one part of a comprehensive disease entity in which the digestive system, the nervous system and the endocrine system are also involved, and investigators are now striving to establish correlatives among the various phenomena observable and to find the precise place in the malady as a whole that should be assigned to each integral part.

5. Treatment of the disease, though not curative, is rewarding. Through rest, the administration of dilute hydrochloric acid and of arsenic, injections of blood and other measures, the patient's condition can often be greatly ameliorated, and in many instances remissions of variable duration may be induced. Early recognition of achylia, paresthesias, glossitis, and of megalocytosis (before anemia develops) may permit of prompt treatment that will tend to keep the malady latent. Intermarriage of members of families in which the disease is known to occur should be discouraged.

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ABSTRACT OF DISCUSSION

Dr. Russell L. Haden, Kansas City, Mo.: I was glad to hear Dr. Barker mention that pernicious anemia is a large symptom complex. I am sure we often overemphasize the anemia part. As we study more cases of this general type, we must realize that there are many patients in whom the same toxin is active without the development of a typical blood picture of pernicious anemia. This is well illustrated in the cases of combined sclerosis of the spinal cord due to the same fundamental cause. In these cases the anemia may be absent or an unimportant factor. I think Dr. Barker has correctly evaluated the present status of the experimental production of pernicious anemia in animals. It is true that macrocytic anemias have been produced, but this may be done by a large number of agents. Conclusions regarding an etiologic relation must be cautiously drawn. I feel sure that the value of hydrochloric acid in large doses cannot be emphasized too strongly in the matter of treatment. I always tell patients that if I had pernicious anemia, I would take hydrochloric acid the rest of my life. If cases were recognized early, and such treatment given, it is probable that the outlook would not be so hopeless. I have observed one patient whose case was correctly diagnosed pernicious anemia thirteen years ago. He still has the disease but is able to carry on his work successfully.

Dr. Henry A. Christian, Boston: Two of my colleagues, Dr. Minot and Dr. Murphy, have been feeding pernicious anemia patients a high protein diet. The basic part of that diet, and the most important part, is from 120 to 140 Gm. of liver a day. At times sweetbread or kidney may be substituted for the liver. In addition, they get equal amounts of beef or mutton. All of these meats are cooked simply and not thoroughly done; that is, they are taken rare. In addition, these patients are encouraged to take green vegetables very freely, particularly those low in carbohydrates. They also get fruits, such as oranges, grapefruit, peaches and strawberries. They have rather a high feeding in the form of starch, as much as they will take of bread, potatoes, macaroni, spaghetti and cereals. They are limited in fats and in sweets. They take moderate amounts of hydrochloric acid, from 1 to 4 cc., six times a day, one dose just prior to a meal and one with the meal. No other medication and no other form of treatment is used. Forty-five cases are under observation, some for two and one-half years, the bulk of them falling within a year or a year and one-half. The important thing about this treatment is that the patients in a short time are able to eat this diet, and their blood builds up. In all the forty-five cases, with one exception, within a month there was a definite increase in the blood count and a definite improvement in the amount of hemoglobin, with general improvement. It is too soon to say that these patients will not have a remission. Two features in the laboratory examination are striking. In eight or ten days after they begin this diet, these patients get a very striking increase in the reticulated cells, and sometimes these reach as much as 15 per cent. At about that time, the red cells begin to increase in number and the hemoglobin increases. With the increase in the reticulated cells, the evidence of hemolysis, as shown by an increase in the bile index, lessens. The figure for the bile index decreases and very soon the bile index actually becomes lower than the average normal. Dr. Minot and Dr. Murphy do not regard this as a cure, but it is so simple, it is so easily carried out, and the patients we have are so comfortable on the treatment that it is worthy a trial. One interesting thing is that this rather large diet is soon taken by the patient without any great amount of difficulty. In the beginning, when the patient is nauseated, one must begin with a small amount of the various foods, but the surprising thing is that soon they are eating a large diet of these heavy, rather rich foods and they are much the better for it.

Dr. W. L. Bierring, Des Moines, Iowa: The remarks of Dr. Christian regarding the use of a diet rich in protein foods are so suggestive that I will cite an instance that may have a bearing on this plan of treatment. A farmer, aged 40, came under observation about sixteen months ago. The pernicious anemia changes developed rapidly. A year ago two blood transfusions were given, followed by a remission, so that by September, 1925, the erythrocytes had reached 4,500,000 per cubic millimeter. Later in the year he lapsed again, and by January of this year the red cells had dropped to 1,500,000. Two blood transfusions were again given with no benefit, and the anemia progressed, so that by February 25 the hemoglobin was reduced to 10 per cent and the erythrocytes to 560,000 per cubic millimeter. The patient left the hospital on this date, and was transported by ambulance to his home in the country, about 12 miles distant. His wife was a very intelligent woman, and, while recognizing his serious condition, begged the privilege of trying her own way of feeding him. At the hospital he had taken only a limited diet, yet under the influence of home cooking, he soon developed a keen appetite, and, unbelievable as it may seem, within ten days after leaving the hospital, he was eating with a relish nine meals in twenty-four hours. Two or three times during the night he called for food. During the last six weeks his wife has fed him a large T-bone steak and nine eggs each day. In examining her diet list one day, it was noted that she gave special prominence to foods rich in iron, vitamins and proteins. Evidently appreciating the purpose of giving dilute hydrochloric acid, she gave 15 drops well diluted after each of the nine meals. My interest becoming aroused, I visited him twice a week in order to observe his progress and make personal blood examinations. The blood condition steadily improved, and last Friday, eight weeks after leaving the hospital, the hemoglobin was 85 per cent, and the red cells numbered 4,600,000 per cubic millimeter. The cells in the stained blood spreads are difficult to distinguish from normal erythrocytes. His general appearance corresponds to the remarkable improvement in the blood state. He walks about, has a good color, and is always in the best of spirits.

Dr. Eugene S. Kilgore, San Francisco: A physician who is a good observer, and who has pernicious anemia himself, assures me that there is a difference in the value of blood donors independent of hemoglobin percentage, etc. His hemoglobin at one time was down to 17 per cent. He has received fifty-five transfusions in the last few years. Most of them were of very transitory benefit until finally he received one from a large boned young woman suggesting the acromegalic type, after which he obtained a definite remission. Six months later, when he began to slip a little again, he secured another transfusion from the same source, and since then he has remained well and in active practice for thirty months. He is keeping track of that woman.

Dr. Lewellys F. Barker, Baltimore: Dr. Haden has spoken of the toxic nature of the disease. The general opinion is that pernicious anemia is due to an intoxication. In my paper I have pointed out that the term "intoxication" is used in a rather loose way. It is often difficult to know just what is meant when a writer uses the word. He may refer to the action of an exogenous poison or of an endogenous poison, or he may refer to the effects of the diminution of some normal substance in the body that allows something else to become "toxic," because it is not balanced by the first factor. If heredity is the main causal factor in pernicious anemia, it will have to be found out just how it *predisposes to the disease*. It is possible that the achylia gastrica, the tendency to degeneration of the white columns of the spinal cord as well as the disequilibrium between the blood-destroying functions of the reticulo-endothelial system and the blood-building functions of the bone marrow, are all expressions of the pathologic inheritance. That the blood serum in pernicious anemia is definitely toxic appears to have been shown by the phytotoxic tests of Dr. Macht. Dr. Christian's remarks on the dietetic treatment have interested me much. Some years ago Dr. Thomas P. Sprunt and I read a paper on the treatment of pernicious anemia by means of the rest cure in which general upbuilding treatment was combined with the feeding of large amounts of milk and eggs in addition to an all-round mixed diet. Many patients got remissions quickly and without transfusions. The Boston workers lay emphasis on the high purine content of their diet. One could test the validity of their view, perhaps, by trying the administration of pure purines along with a diet that is poor in purines and contrast the effects obtained with those following a purine-poor diet alone. As Dr. Bierring has pointed out, the Boston diet is rich not only in purines but also in vitamins, especially when liver is fed. It may be that the benefit we get from administering cod liver oil is largely due to the vitamins it contains. The amount of fat seems small; but the vitamin content may be very important. I can't believe that foods rich in iron are of especial importance in pernicious anemia, for the body is "loaded" with iron in that disease; there is extensive siderosis of the organs.

CANCER, VITAMIN IMBALANCE, AND ROENTGEN-RAY ACTIVITY *

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ST. LOUIS

Hopes for the proper and precise use of roentgen rays and the rays of radium depend primarily on a knowledge of their action on the tissues and means of administering them in a qualitative and quantitative manner. In previous articles[1] we have outlined a method for measuring these rays in electrostatic "e" units and also a method of investigating for the first time the effects of a definitely known type or quality of roentgen-ray energy on the cells and the tissues. The roentgen ray can produce as well as destroy cancer. It has become evident, therefore, that when we know more about cancer, some of the more important effects of roentgen rays on the tissue will not only become known, but the effect of growth stimuli in general will also become unraveled. One of the most interesting peculiarities of cell stimulants is that all of them in overdoses destroy the cells. Roentgen rays evidently belong in this class.

The solution of cancer demanded first the solution of two important problems. The first of these problems is whether the cell is the dominating factor in man and the higher animals, or whether other more general formative forces determine the form of the body and the general activity of its cells. The second problem is whether cancer belongs in the class with other infectious diseases, as many recent authors[2] have tried to prove, whether it is merely the release of the cell of forces dominating it in the organism, or whether it is the result of a special differentiation of the cell.

Recent careful work on cancer has shown that the active independent growth of the cells in this disease is not the result of any specific invading organism or other agent. It has now been shown that cancer can be produced by any one of a number of different conditions and substances, such as coal tar, other lipoid solvents, roentgen rays, radium, bacteria or animal parasites. In man it occurs most frequently in tissues suffering atrophy, in old inflammatory processes, and in congenital and other forms of benign tumors.

Further studies on the action of coal tar, radium, roentgen rays and animal parasites have shown that while they are capable of inducing cancer they are not necessary for its subsequent course. Cancer once induced by them proceeds then always independently of them. Cancer is not the result, therefore, of any specific agent, but is evidently an active independent growth of body cells induced by any one of a number of different conditions or substances. It is therefore either the result of some differential change in the cell or a change in the environment which releases the cell from those forces which dominate it in the normal organism and compel it to work for the whole.[3]

In previous articles,[4] one of us has shown that this change is not primarily in the cell but in the environment. Cancer is the release of the cells from some unknown general force or forces that dominate and control its activity in the normal organism. The body cell is probably not different, therefore, from other cells in nature as far as its general make-up is concerned. The conditions that allow it to be dominated by other forces in the body are to be found in small peculiarities of its structure.

Many of the older workers in general biology and medicine had already appreciated that body development is not a product of the cell but of other much more general formative forces. This idea is clearly expressed in the works of Hofmeister, Sachs and DeBary, as well as in the later works of Driesch, Hertwig, Whitman, Ribbert and others.[5] It remained for the tissue culture to give absolute proof of this belief. In these cultures it has been shown that the changes which the cell undergoes from maturity to death—growth, differentitation and function—are not changes peculiar to it, but merely a reaction that it may suffer under the influence of different conditions in its environment. In the cultures it is possible to change actively contracting embryonic heart muscle cells into actively growing ones, which invade the medium and have the appearance of sarcoma cells, and then change these cells back to actively contracting ones or change them into cells which resemble fibroblasts by simply changing the environment about them. These changes are induced by changing not the chemical but merely the mechanical conditions about the cells in the cultures.[6]

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* Read before the Section on Radiology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

* From the Research Laboratory and the Department of Radiology of the Barnard Free Skin and Cancer Hospital, and the Department of Surgery, Washington University School of Medicine.

[1] Burrows, M. T.; Jorstad, L. H.; Lunsford, C. G., and Ernst, E. C.: Studies on the Biological Effects of X-Rays and Methods of Measuring X-Ray Dosage, read before the International Radiological Congress, London, July, 1925. Burrows, M. T.; Jorstad, L. H., and Ernst, E. C.: The Effect of X-Rays on the Vitamin Needs of the Organism and Cancer, Radiology, to be published.

[2] Gye, W. E.: Lancet **2**: 109 (July 18) 1925.

[3] Burrows, M. T.: Radiology **4**: 407 (May) 1925.

[4] Burrows, M. T.: Tr. II Pan.-Am. Sc. Cong., Washington, D. C., 1915, Sect. 8, Pt. 2, p. 494.

[5] Wilson, E. B.: The Cell, New York, the Macmillan Company, 1906, pp. 415 and 394.

[6] Burrows, M. T.: Johns Hopkins Hosp. Rep. **18**: 373, 1915.

It became evident, therefore, that whether the cells of the body are to grow as cancer or to differentiate and function for the whole depends on their immediate environment or forces external to the cell which regulate these environmental conditions about them. The secrets of cancer and the forces governing normal development and body structure lay, therefore, in the further study of these environmental conditions.

As noted in previous papers,[7] the conditions suitable for the cells to grow independently are crowding, stagnation and oxygen. Normal cells crowded into a small drop of stagnant medium in a tissue culture grow readily. This growth can be stopped by separating the cells, by increasing the relative amount of medium about them, or by washing them with a stream of serum or salt solution.

Under conditions of less crowding, the embryonic cells in the cultures differentitate into adult types. Function maintains in these cells when one end is in contact with a stagnant mass of cells, or is bathed by fluids flowing from such masses, and the other end is free from these conditions. The latter facts were determined by a study of embryonic muscle cells in the tissue cultures.[8] These cells, when crowded in the culture, revert quickly to simple growing or sarcoma-like cells. When scattered in the medium, they differentiate into fibroblasts. When they become placed so that one end is in contact with a stagnant mass of cells or fluid coming from such a stagnant mass and the other end is in contact with a part of the medium into which any substance may escape, which may be formed in the metabolism of the cells, they contract rhythmically. All types of function in the body depend evidently on this polarization of the cells. The type of function, on the other hand, is dependent on the particular cell polarized. The nerve cells are stretched between the dense brain tissue and an end organ. The gland cells are stretched between a stagnant duct and a rich vascular supply without.

Applying these facts to the animal organism, it became evident therefore that cancer may be only the result of anything that leads to a local crowding of cells in the organism and a relative reduction in the blood supply to the mass. Normal function, on the other hand, is the result of forces external to the cell which have caused the development of the structure peculiar to the body and the blood vascular system.

In proof for such a conception, it has been found that those substances and conditions which induce cancer act always to form such a dense, stagnant organization.[9] Drops of coal tar induce cancer in that they attract the cells to them away from their intercellular substances and blood vessels, and crowd them about their peripheries.[10] Animal parasites, bacteria, roentgen rays and radium produce the same organization in that they cause the cells to proliferate in the tissues without the formation of blood vessels and intercellular substances. They are thus able to build stagnant masses of cells which, when reaching sufficient dimensions, are able to grow independently.[11]

In analyzing for the significance of the conditions of cell crowding, oxygen and stagnation, it has been found that they are important because growth depends on the presence of a certain high concentration of a substance or substances, which has been called the archusia (S). The archusia (S) is formed by the cells in proportion to the oxygen absorbed. It is readily soluble in salt solution, plasma, serum and the circulating fluids of the body. Wright[12] has recently shown that it dialyzes also readily through celloidin membranes. This substance cannot be retained by the cells in the presence of an active circulation. It can accumulate about the cells in quantities sufficient for growth only when a sufficient number of cells are liberating it a small stagnant area from which it cannot escape.

This substance can be extracted with salt solution from any actively growing tissue. These extracts act on other cells treated with them. Extracts of the archusia of body cells excite activity not only in all types of body cells, but also in other cells of nature; and extracts containing the archusia of one animal or bacteria excite activity also in another animal's cells.

Further studies of the action of the archusia (S) has shown that it is important not only for growth, but all activity in tissue cells. In low concentrations, S^1, this substance has no effect. In medium concentrations, S^2, it stimulates the cells to migrate, differentiate and function. In high concentrations, S^3, it causes the cells to grow and divide. In all higher concentrations, S^4, the cells suffer a self-digestion in its presence. This self-digestion is not the same as autolysis occurring in the absence of oxygen. No toxic substances are liberated by it. It is similar to the degeneration seen in the center of cancerous nodules.[13]

In applying the latter facts to the animal organism, it was found that cancerous tissue contains always an S^3 and S^4 concentration of the archusia. The normal organism, on the other hand, contained no such quantities of this substance. The blastomeres of the egg, when crowded in cultures, are unable to form enough of this substance for their growth. This inability of these cells to form this substance disappears with the yolk granules in them. At the time of the disappearance of the yolk granules, the circulation is too great in the embryo for the cells to form and retain ample archusia for their independent growth. They can grow independently only when this circulation is disturbed. Later in the development and adult life it was noticed that the cells are again unable to form the necessary amount of the archusia for their growth unless they are washed first with plasma or other lipoid solvents. The latter change in the conditions of body tissue appears with their differentiation and the development of intercellular substances about them.

A more careful study of the formation of intercellular substances in the body and the storage of fat in the cell has shown that these acts are instituted by a lipoid substance liberated by the cells. The cells draw fats and proteins into themselves through the liberation of this lipoid and the absorption of it by these proteins and fats. The extracellular substances of the body are extracellular proteins coagulated by it. This substance has been called the ergusia (L). It is formed by the cell in its growth reaction and is evidently the active substance that draws water and other substances into the cells during growth. This substance acts to inhibit growth when added in excess to a growing system.[14] The inhibition of activity in the blastomeres and in the cells of later life is the result of an excess of this substance.

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[7] Burrows, M. T.: Proc. Soc. Exper. Biol. & Med. **21**:94, 1923.

[8] Burrows, M. T.: Am. J. Physiol. **45**:556, 1917-1918.

[9] Burrows, M. T.: South. M. J. **17**:233 (April) 1924.

[10] Jorstad, L. H.: J. Cancer Research **9**:232 (June) 1925.

[11] Burrows, M. T., and Johnston, C. G.: Action of Oils in Production of Tumors, with Definition of Cause of Cancer, Arch. Int. Med. **36**:293 (Sept.) 1925.

[12] Wright, G. P.: On the Dialysability of the Growth Activating Principle Contained in Extracts of Embryonic Tissue, J. Exper. Med. **43**:591 (May) 1926

[13] Burrows, M. T.: The Mechanism of Cancer Metastasis, Arch. Int. Med. **37**:453 (April) 1926

[14] Burrows, M. T.: Energy Production and Transformation in Protoplasm as Seen Through a Study of the Mechanism of Migration and Growth of Body Cells, Am. J. Anat. **37**:289 (May) 1926.

While these observations were interesting, the question arose, How does the body grow—whence does the stimulus for growth arise which maintains the organism and leads to the development of the blood vascular system? Is the perfectly regulated growth of the body due to the fact that the body cells have been overloaded with growth inhibitor by the mother so that they must depend on an external supply of the growth stimulus, the archusia? Is this overabundance of growth inhibitor, the ergusia, which the body has imposed on itself and the mother on the egg cell only in fact something which nature has imposed on the cells of the organism and made them grow to form the higher types of living things? Is man merely the product, first, of a universe which has been filled with an excess of archusia and ergusia, and, secondly, of certain cells that are easily affected by this supply?

It is now absolutely certain that higher forms of animal and plant life are dependent for their existence on certain specific substances in their diet which have been called vitamins. The most important of these substances are vitamins A and B. These vitamins are not essential for the life of many unicellular organisms. In fact, vitamin A inhibits the growth of these organisms. While vitamin B stimulates their growth, they can grow without it because they can readily form it.

In studying more carefully the general conditions for the growth of normal body cells, it has been found that while the blastomeres are unable to form ample archusia for growth, they can be made to grow by the addition of archusia to the medium about them. While the ergusia is formed in the cell during its growth, there is no evidence that it is formed in the cell during its period of differentiation and function; yet it is evidently being used at all times by the differentiated cells in laying down intercellular substances, in the storage of fat and, as shown in other papers, during their functional acts.[8] There is no evidence that the excess of ergusia in the body is the result of any activity in it. It must be supplied, therefore, from without. In studying more carefully the properties of the archusia and the ergusia, it was found that they are similar to the properties of vitamins B and A, respectively. It has also been found that the archusia fed to animals replaces the necessary vitamin B in their diet.[15] Ergusia removed from the body can be replaced again by feeding vitamin A.[16] Vitamin A is a product of the protoplasm of any growing cell in nature.[17] It is not liberated by these cells during their growth but only when they are caused to suffer digestion and destruction in the presence of an excess of archusia. Vitamin B is only the archusia liberated by any growing cells in nature. Actively growing and nontoxic yeast and bacteria liberate only vitamin B. When these cells are allowed to overgrow their cultures and are destroyed by an S[4] concentration of their own archusia, vitamin A is liberated. It is evidently formed in nature in the manure pile and in the molding leaves and other putrefactive processes. It is picked up from these sources by the fats of plants and thence passed on to animals and from animal to animal.[17] It has also been shown that the yolk of hen's eggs contains large quantities of archusia or growth stimulus necessary to cause the blastomeres to grow,[18] and by feeding the tissues of embryos it has been shown that their vitamin A value varies exactly as their ergusia content. Cancerous tissues contain large quantities of vitamin B, but no vitamin A. Coal tar produces cancer not only in that it draws cells together into dense masses, but in that it dissolves and removes the vitamin A from these tissues. It not only removes the growth inhibiting substances from about the cells, but crowds them so that they may form and retain ample archusia or vitamin B for their growth. The cells thus become independent of any external supply of growth energy. Cancer is, therefore, only the result of anything which so disturbs the vitamin balance of the tissues. The normal organism comes into existence only as these vitamins are imposed on its cells in the proper proportions.

THE ACTION OF GROWTH STIMULANTS

It was these facts which gave the possibility for the first time to study the nature of the action of growth stimulants in general and the action of light rays in particular. Any substance or force causing the cells to form an excess of the archusia (S) or vitamin B must cause them to grow or degenerate, depending on the amount of archusia liberated and retained about them.

Lights may act, therefore, in this capacity. They may not form vitamin A from simple fat as many authors[19] have believed recently, but they may act simply to break the combination between the vitamin A and the fats that have dissolved it. They may cause the formation of vitamin A only through a primary excessive formation of vitamin B in living cells.

To prove or disprove this possibility, it had become of interest to study the effect of roentgen rays on animals fed on a normal dietary and others fed dietaries deficient in vitamins B and A, respectively. In previous papers it had been shown that animals fed from fifteen to thirty days on diets deficient in either vitamins B or A are more resistant to large doses of roentgen rays than animals fed on a normal diet. These animals fed on a diet deficient in vitamin B survive longer than those fed on a diet deficient in vitamin A. It had also been shown that repeated small doses of roentgen ray prolong greatly the life of rats fed on a diet deficient in vitamin B, but has no or very little effect on animals fed on a diet deficient in vitamin A. Certain rats can be made to live apparently indefinitely on a diet containing no B, if given the proper amount of roentgen ray. Two rats placed on a minus B diet, March 15, 1925, are still living. They have grown normally, have normal hair and are active. Their only abnormality is that they do not breed. Two other rats of the same series died after seventy-five and eighty-seven days, respectively. These rats received 150 milliampere minutes (204 "e" units) of roentgen ray, March 28, 1925. A second and similar dose was given, June 7. A third dose of the same amount was given, October 28. These rats have been kept for the last three months in a screened bottom cage through which all feces fall. They have evidently lived entirely on their deficient diet.

The life of other rats fed on a diet deficient in vitamin B and given 13 "e" units of roentgen ray twice a week have been prolonged also, but not to the great extent of the rats given the few larger doses. They succumbed after 170 days, and their growth curve never reached the normal limit.

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[15] Burrows, M. T., and Jorstad, L. H.: On the Source of Vitamin B in Nature, Am J. Physiol. **77:** 24 (June) 1926.

[16] Jorstad, L. H.: J. Exper. Med. **42:** 221 (Aug.) 1925.

[17] Burrows, M. T., and Jorstad, L. H.: On the Source of Vitamin A in Nature, Am. J. Physiol. **77:** 38 (June) 1926.

[18] Wright, G. P.: On the Presence of a Growth Stimulating Substance in the Yolk of Incubated Hen's Eggs, Proc. Soc. Exper. Biol & Med. **23:** 603 (April) 1926.

[19] Hess, A. F.: The Ultraviolet Rays of the Sun, J. A. M. A. **84:** 1033 (April 4) 1925.; Steenbock, Harry; and Daniels, Amy L: Irradiated Foods and Irradiated Organic Compounds, ibid. **84:** 1093 (April 11) 1925.

The life of rats fed on a diet deficient in vitamin A was not noticeably prolonged by giving 13 "e" units of roentgen ray twice a week.

In the experiments to be reported in this paper, it had become of interest to see whether the larger repeated doses would not protect the rats on a minus A diet as well as those on a minus B diet. As noted in the foregoing, vitamin A is liberated by the cells in the presence of a high vitamin B value. Larger doses of roentgen ray should liberate greater quantities of vitamin B, and this greater quantity should in turn liberate vitamin A.

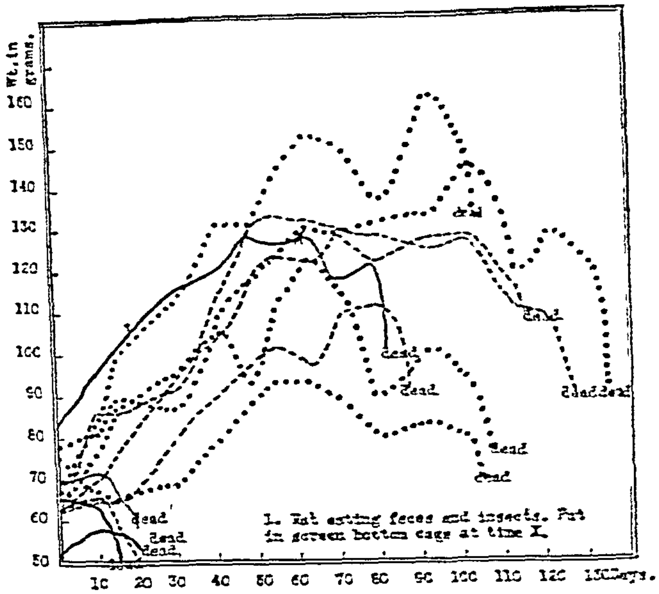

Chart 1.—Growth curves of rats fed on a diet deficient in vitamin B. The solid lines are the growth curves of the controls which received no roentgen ray. The checked and dotted lines are the growth curves of rats given 25 and 50 milliampere minutes (34 "e" and 68 "e" units) of roentgen rays, respectively.

In this series of experiments, groups of rats fed on a diet deficient in vitamin B and on a diet deficient in vitamin A, respectively, were given 34 "e" and 68 "e" units of roentgen rays, respectively, twice a week. Under the latter conditions it was found that the rats on a vitamin B deficient diet have a normal growth curve (chart 1). The same normal growth curve is also seen in these rats fed on a diet deficient in vitamin A and given the larger dose of roentgen rays (chart 2). In both instances the rats succumbed, however, after from 100 to 130 days.[20]

COMMENTS AND CONCLUSIONS

Cancer, in the light of these studies, is only the result of anything that leads to an excessive production of vitamin B or removes the vitamin A or growth inhibitor from small areas of tissue in the body. Roentgen rays act only to increase the vitamin B content in the tissues. In the proper dosage, therefore, it may produce cancer as it may through the excessive production of vitamin B destroy cancer. Cancer is only the result of a vitamin imbalance. Normal life depends on a proper balance between vitamins A and B. The problem of the cure of cancer is the restoration of this balance. The problem of the prevention of cancer is the prevention of such imbalances taking place.

Roentgen rays act on the organism to produce vitamin B. Larger doses of these rays lead to the liberation of larger amounts of vitamin B with a secondary production of vitamin A. These larger doses of roentgen rays lead always to an early exhaustion of the rat, while larger doses repeated over long intervals do not cause this early exhaustion.

The roentgen ray becomes important in the cure of cancer in that it liberates an excess of the archusia or vitamin B from the cells when given in the proper doses. As must be noted, the cancerous tissue contains already a high content (S^3) of the archusia. Only a slight stimulation is sufficient to increase this amount to a value of S^4, which causes the cells to degenerate. The normal tissue contains much less archusia. The same dose acting on them may not even cause them to grow.

The first problem, as is evident, for the advance of roentgen-ray therapy is a proper and well controlled dosage. The second problem is to produce the proper reaction in the surrounding normal tissues. Too great a dose on these tissues must cause a decrease in blood supply and make them more favorable for the spread of the cancer. The prevention of this spread of the cancer is the protection of the blood vascular system in these regions. As shown above, the vascular system is only the path of inflow of the vitamins from without. It is maintained through a proper balance of vitamins A and B. The progress in roentgen-ray therapy, as is evident from these studies, will come first through the establishment of a uniform method of measuring (one of us[21] has undertaken and instituted methods for such procedure), and the establishment of proper dietary and nutritional conditions in the patient before such therapy is instituted.

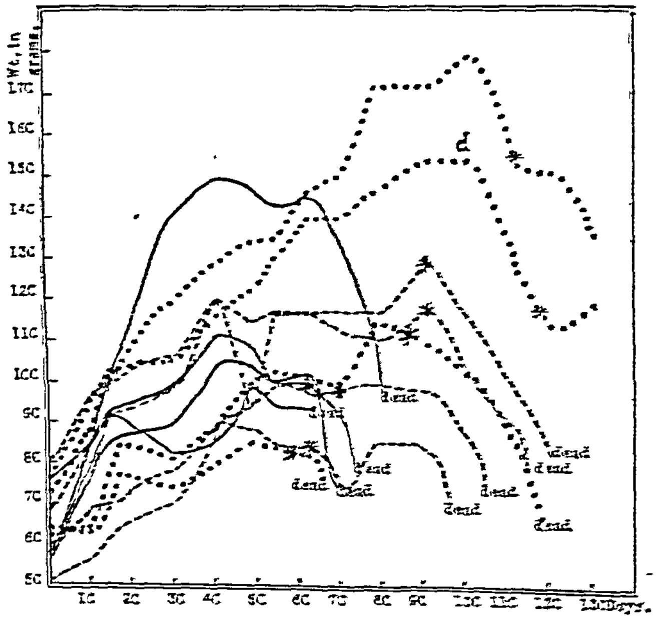

Chart 2.—Growth curves of rats fed on a diet deficient in vitamin A. The solid lines are the growth curves of the control rats which received no roentgen rays. The checked and dotted lines are growth curves of rats given 25 and 50 milliampere minutes (34 "e" and 68 "e" units) of roentgen rays, respectively; d, diarrhea; * xerophthalmia.

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[20] The minus A diet consists of: potato starch, 80 Gm.; egg albumin scales, 50 Gm.; salts (McCollum), 10 Gm.; Crisco, 30 Gm.; Yeast, 10 Gm. The minus B diet consists of: potato starch, 80 Gm.; egg albumin scales, 50 Gm.; salts (McCollum), 10 Gm.; butter, 30 Gm.

[21] Ernst, E. D.: Radiology 5:461 (Dec.) 1925. Preliminary Report of the Committee on Standardization of X-Ray Measurements, Radiology 6:191, 1926.

ABSTRACT OF DISCUSSION

Dr. Francis Carter Wood, New York: This paper is complicated and highly theoretical, but the conclusions are very important, provided they can be confirmed. Every one realizes the importance of the bodily condition of the patient for successful therapy, and that cachectic and septic patients do not do well under irradiation. In correlating the effect of the vitamins on any tumor reactions while irradiation is applied to the whole animal, it is difficult to get an accurate end-point because the death of the animal is not caused directly by the irradiation but secondarily, often through destruction of the blood-forming organs. Even with the same dose, given to a large number of rats, death will occur in some in one day and in others not for four or five days. One difficulty with the theories in this paper is that they do not explain why, for example, tar painting produces epithelioma in mice and not in rats. It is hardly possible to assume that the vitamins in the two animals are different.

Dr. L. H. Jorstad, St. Louis: Dr. Burrows and I have studied this cancer problem. Dr. Burrows has studied it for a great many years, and it was through this study that it was possible for him to isolate the growth stimulus in the tissue culture and find the relationship between it, the archusia and the ergusia. In later studies we have found that the archusia in the body is vitamin B and the ergusia is vitamin A; and, as Dr. Ernst painted out, the balance between these two vitamins makes normal function possible and an imbalance produces abnormal function or behavior of cells in the organism. What I want to emphasize is certain points in the general biologic phase of this problem. Dr. Wood criticized the use of the rat in this kind of experiment. We have a strain of rats that has been running in our laboratory for eight years and we know pretty well the life history of these animals. We know how long they live and have accumulated sufficient data to interpret the significance of weight curves under different conditions of experimentation. In regard to the question of the effect of the roentgen ray, there is no doubt that it is entirely rational to conclude that the effect of vitamins A and B in the organism may be supplied by the roentgen ray under certain conditions. The amount of vitamins supplied by the roentgen rays depends on the dosage of roentgen ray and the period of time over which the animal is exposed to it. I have done a lot of work on the effect produced by coal tar in the rat. Cancer is not produced easily in the rat, and for that reason rats are best suited for the study of experimentally induced malignant tumors. The rat is also a very good animal for these experiments, because it does well on a diet similar to that used by man. After studying the effect of painting coal tar on the skin of animals, I soon appreciated that this method is not suitable for studying the physiologic action of coal tar. My studies of the action of coal tar indicate that it does not act as an irritant in the tissue of a rat. It acts as a lipoid solvent, mazola oil, liquid petrolatum and a few other oils being in the same class. Kenway showed definitely that there is no specific carcinogenic agent in coal tar. I have found that it takes out the ergusia, the vitamin A, from the cell with which it comes into contact, and if this vitamin A is put back into the body, a normal function results in the zone about the lipoid solvent. If enough of it is taken out, and if the coal tar is placed into cellular tissue, cancer is produced. I obtain carcinoma and connective tissue transformation that looks like spindle cell sarcoma sixty days or later after one injection of coal tar into experimental embryoma of rats. Cancer is not the result of irritation, but of a specific kind of change produced in the tissue which causes the vitamin B fraction of the organism to increase and the vitamin A fraction to decrease quantitatively.

Dr. H. J. Ullmann, Santa Barbara, Calif.: I understood Dr. Ernst to say that rats given 0.24 unit three different times to a total of 0.72 unit were not fertile. Is that correct?

Dr. Ernst: It is.

Dr. Ullmann: That is rather interesting. We are irradiating rats with fertility in view. A female rat was given 0.75 unit over a period of thirty-seven weeks, 0.02 unit a week. She had two litters. The first one she ate, and the second litter is now healthy and going to be used for the second generation. The male parent of these rats received the same dose. The unit referred to is 1,300 E.

Dr. Edwin C. Ernst, St. Louis: The question of sterility in this last rat experiment was merely an incidental observation. It is well known, of course, that an improper vitamin balance may influence propagation. From the standpoint of the effect of the vitamin imbalance on malignant growths in man, there has been observed in a case of multiple melanosarcoma, distributed over a large portion of the superficial skin surface, definite favorable and unfavorable reactions or visible changes, depending on the degree of the vitamin A or B imbalance introduced by *Bacillus tumefaciens*. Following the injection by means of an enema of a known quality of a fresh culture of *B. tumefaciens* containing largely vitamin B, the size of the individual tumors increased 50 per cent, but again presented a reduction in size following a subsequent injection of old cultures containing vitamin A. Likewise a small dose of roentgen ray administered over selected tumors individually increased their growth, similarly to the effect of vitamin B, while larger doses produced necrosis. We are not attempting to cure established cancer lesions by diet measures alone, but have been carefully analyzing our animal experimentations and applying these deductions and observations to the treatment of malignant growths in man, slowly feeling our way through the many dark channels of the cancer problem. From the standpoint of the patient, it is only logical that the type or combination of the treatment to be administered should vary depending largely on the physical condition of the patient and the location and character of the tumor. If the tumor is well supplied with vessels, then vitamin B and roentgen-ray irradiation may be the more effective method. However, a well localized large tumor in a cachetic patient will require either a well balanced vitamin diet or foods containing high vitamin A values in combination with moderate roentgen-ray doses by the fractional method. All these clinical observations, however, will require further practical study and corroboration as to the systemic and localized effect of the vitamins on both the patient and the tumor under treatment.

Butter, Beef and Yeast as Pellagra Preventives.—Trials of butter in a daily quantity of about 140 Gm. (5 ounces) using a Georgia product had practically invariably failed to prevent recurrence of pellagra. Trials with a Vermont product proved no more favorable than those with the Georgia butter. Butter would seem to be poor, or lacking, in the pellagra-preventive factor or factors. The pellagra-preventive action of a daily allowance of 200 Gm. (7 ounces) of fresh meat in the form of lean beef was tested and found capable of completely preventing the disease, thus proving that fresh beef contains the pellagra-preventive factor or factors. The beef-supplemented diet, though adequate for pellagra prevention, was, during about half of the period of study, slightly deficient in the beriberi vitamin. The pellagra-preventive action of a dried yeast extract was tested in a daily quantity of 15 Gm. (half an ounce) and found efficient in preventing the disease. The yeast-extract-supplemented diet was adequate to prevent pellagra, but, during a part of the period of observation, was slightly deficient in beriberi vitamin. The results of the studies presented are believed to strengthen the interpretation of those previously reported, namely, that in the prevention and presumably causation of pellagra there is concerned a heretofore unrecognized or not fully appreciated dietary essential (factor P-P), and to indicate the probability that this may play the sole essential rôle in relation to the disease. It is briefly pointed out that the substances that have been found to possess black tongue-preventive potency have, when tried in pellagra, been found efficient preventives of the human disease, and that those that had failed in pellagra, or were of low pellagra-preventive potency, when tried in black tongue have failed, or were feeble, as preventives of the canine disease.—Goldberger, Joseph; Wheeler, G. A.; Lillie, R. D., and Rogers, L. M.: *Pub. Health Rep.* **41**:312 (Feb. 19) 1926.

SPORADIC MENINGOCOCCUS MENINGITIS

SEQUELAE FOLLOWING SPECIFIC SERUM THERAPY IN INFANCY AND EARLY CHILDHOOD *

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AND
JOHN P. CAFFEY, M.D.
NEW YORK

The curative value of specific serum in the treatment of sporadic meningococcus meningitis in infancy and early childhood has been evident for many years. Prior to the introduction of serum therapy, the mortality of the disease in the first year of life approached 100 per cent. In infants under 1 year of age treated by us with serum, recovery occurred in approximately 50 per cent. In children between the ages of 1 and 5 years, 85 per cent recovered. The later growth and development of these children with apparent complete recovery from their acute infection is of interest and of considerable importance. We have observed forty-four such cases (excepting two patients who died in the first year after discharge from the hospital) over a period varying from one to ten years, and these form the basis of our report.

In ninety-seven patients with meningococcus meningitis treated with serum at the Babies' Hospital in the ten year period from 1916 to 1926, recovery occurred in fifty-nine, or 61 per cent. These cases were all of the sporadic type, since the disease has not appeared in true epidemic form in New York City in the period covered in this study. The diagnosis in forty cases was proved by finding meningococci in the cerebrospinal fluid. In the remaining four, the diagnosis was made because of the purulent character of the fluid in which no organisms of any variety could be found. The serum used was polyvalent. It was made in the laboratories of the New York State Department of Health, of the Health Department of New York City, or of the Rockefeller Institute. The patients varied in age from 35 days to 4½ years.

Follow-up examinations have been made in forty-four of the fifty-nine cases. Twenty-five of these patients have been observed for three years or longer, and in this group, fifteen have been under observation from five to ten years after treatment. In the total number of cases followed, thirty, or 69 per cent, presented no abnormalities throughout the period of observation. Nine, or 20 per cent, showed serious sequelae, and death occurred in five, or 11 per cent.

Table 1.—*Data in Normal Cases*

Patients	Period of Observation	Present Age	Age at Time of Treatment	Day of Disease Treatment Began	Number of Days of Treatment	Total Amount in Cc. of Serum Injected Intrathecally	Organisms: Culture	Organisms: Smear	Obstruction of Subarachnoid Space*
D. H.	10¼ months	12 months	5 weeks	2	5	137 and 30 intravenously	Positive	Positive	Yes
R. A.	12 months	15 months	3 months	6	21	125	Negative	Positive	Yes
M. S.	9¾ years	10 years	3 months	5	3	55	Positive	Positive	No
B. H.	3⅔ years	4 years	4 months	4	4	50	Negative	Positive	No
J. N.	7⅔ years	8 years	4 months	18	7	140	Positive	Positive	Yes
R. W.	8 years	8½ years	6 months	9	11	190	Positive	Positive	No
S. N.	5 months	11 months	6 months	7	4	55 and 20 intravenously	Positive	Positive	No
M. G.	6⅔ years	7⅙ years	6 months	31	9	70	Negative	Positive	No
J. J.	9 months	15 months	6 months	5	4	80	Negative	Positive	No
A. J.	1 year	18 months	6 months	20	4	83	Positive	Positive	Yes
J. N.	5½ years	6 years	6 months	8	19	170	Negative	Negative	No
H. L.	1⅔ years	2¼ years	7 months	22	4	46	Negative	Negative	No
H. D.	3¾ years	4½ years	7 months	1	17	200	Negative	Positive	No
J. T.	4 years	4⅔ years	8 months	7	7	140	Negative	Positive	No
L. T.	1 year	1⅔ years	8 months	4	3	140	Positive	Negative	No
T. W.	3¼ years	4 years	9 months	16	4	97	Positive	Positive	Yes
J. M.	11 months	1⅔ years	9 months	2	4	95 and 10 intravenously	Positive	Positive	Yes
A. S.	8½ years	9½ years	1 year	33	4	80	Positive	Positive	No
A. R.	7 years	8 years	1 year	22	10	90	Negative	Positive	No
I. B.	1 yr. 11 mo.	2 yr. 11 mo.	1 year	8	5	129	Negative	Positive	No
F. LaR.	1½ years	2 yr. 7 mo.	13 months	4	6	83	Negative	Negative	No
T. S.	7 years	8⅙ years	14 months	22	11	143 and 40 intravenously	Positive	Positive	No
L. P.	5 years	6½ years	1½ years	15	5	110	Negative	Positive	No
A. S.	6⅔ years	8½ years	22 months	5	10	175	Positive	Positive	No
A. A.	1¾ years	3 yr. 7 mo.	22 months	2	6	135 and 25 intravenously	Negative	Positive	No
D. K.	19 months	4 yr. 1 mo.	2½ years	32	5	140	Positive	Positive	Yes
A. S.	1⅓ years	4⅓ years	3 years	4	8	180 and 40 intravenously	Positive	Positive	No
L. D.	10 years	13 years	3 years	5	10	200	Positive	Positive	No
J. McC.	1 yr. 7 mo.	5½ years	3 yr. 11 mo.	15	6	120 and 240 intravenously	Positive	Positive	No
J. R.	3 years	7½ years	4½ years	4	4	65	Negative	Positive	No

* The phrase "obstruction of subarachnoid space" is used in text and tables with the realization that it is impossible to ascertain the exact point of obstruction in cases showing "blocking."

In the group of thirty normal cases (table 1) nothing worthy of special mention was found except an occasional positive Chvostek sign or a tache cérébrale. These children showed the average height and weight for age, with normal mental and physical development. They had not been unusually susceptible to other infections since recovery from meningitis, and were active and healthy. In none was there any evidence that the early meningeal infection or the intrathecal treatment had caused subsequent impairment of intellect. The older children had made average progress in school. There were no cases of endocarditis, arthritis, pericarditis or any other extrameningeal sequelae occasionally found following meningococcemia. In adults, pain, stiffness of the lower back, disturbance of gait and paralysis of the bladder and rectum have been considered sequelae of local injury secondary to repeated lumbar puncture and serum injection into the lumbar spine. None of these symptoms developed in this group. There were no instances of relapse after recovery or a reinfection with the meningococcus.

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* From the Department of Diseases of Children, Columbia University College of Physicians and Surgeons, and the Babies' Hospital.

* Read before the Section on Diseases of Children at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

In the nine patients showing sequelae (table 2) four were cases of deaf-mutism, two of hydrocephalus, two of impaired vision, and one of mental deficiency.

In the four deaf-mutes (9 per cent of the total cases), there were no associated sequelae. Only one received treatment during the first week of the disease. These patients were discharged from the hospital at the ages of 4 months, 6 months, 14 months and 30 months, and on final examination before discharge, deafness was not detected nor had it been a recognized symptom before treatment was begun. It was impossible to determine accurately from the parents' observation when the deafness was subsequently noted. All four infants had bilateral nerve deafness, probably as a result of early involvement of the eighth nerve occurring prior to the introduction of serum. The discovery in the follow-up of four previously unsuspected cases of deaf-mutism suggests that caution must be used in giving a prognosis until the patient is old enough to cooperate satisfactorily in tests for hearing.

Table 2.—*Sequelae*

Patients	Period of Observation	Present Age	Age at Time of Treatment	Day of Disease Treatment Began	Number of Days of Treatment	Total Amount in Cc. of Serum Injected Intrathecally	Organisms: Culture	Organisms: Smear	Obstruction of Subarachnoid Space	Fluid on Discharge	Type of Sequelae
J. R.	2⅔ yr.	2 yr.	4 mo.	14	17	123	Negative	Positive	Yes	10 cells	Deaf-mutism
F. M.	7⅛ yr.	7½ yr.	4 mo.	29	6	70	Negative	Negative	No	60 cells	Hydrocephalus
M. M.	1⅝ yr.	2¼ yr.	5 mo.	5	6	120	Negative	Negative	Yes	106 cells	Hydrocephalus
S. P.	8 yr.	8½ yr.	6 mo.	11	5	75	Positive	Positive	No	90 cells	Deaf-mutism
C. E.	6⅓ yr.	7 yr.	8 mo.	4	7	175 and 45 intravenously	Negative	Positive	No	70 cells	Feeblemindedness
D. G.	2½ yr.	3¼ yr.	12 mo.	21	4	250	Positive	Positive	No	20 cells	Impairment of vision
E. A.	2 yr.	3½ yr.	18 mo.	9	10	127 and 80 intravenously	Positive	Positive	No	8 cells	Impairment of vision
A. P.	4 7/12 yr.	6½ yr.	23 mo.	11	11	165	Positive	Positive	No	130 cells	Deaf-mutism
P. M.	3¼ yr.	5¾ yr.	2½ yr.	4	5	77	Positive	Positive	No	120 cells	Deaf-mutism

Table 3.—*Deaths*

Patients	Period of Observation	Age at Death	Age at Time of Treatment	Day of Disease Treatment Began	Number of Days of Treatment	Total Amount in Cc. of Serum Injected Intrathecally	Organisms: Culture	Organisms: Smear	Obstruction of Subarachnoid Space	Condition on Discharge from Hospital	Cause of Death
D. L.	3 years	3 years, 3 months	3 months	5	4	120	Negative	Positive	Ventricular; lumbar	3,600 cells	Unknown
P. M.	1 year, 3 months	1 year, 3 months	3 months	6	23	162 and 40 intravenously	Positive; blood positive	Positive	Ventricular; lumbar; cistern	500 cells; discharged as hydrocephalus	Hydrocephalus (necropsy)*
L. P.	4 months	8 months	4 months	22	12	88	Negative	Positive	No	600 cells	Unknown*
M. O.	2 months	7 months	5 months	15	6	105	Negative	Positive	No	40 cells; sent home in good condition; died 2 months later	Marasmus
I. O.	3 years	3 years, 9 months	9 months	36	7	140	Positive	Negative	No	500 cells	Unknown*

* *Unfavorable response to serum therapy.*

In the two patients with impaired vision, E. A.[1] (table 2) showed ocular involvement throughout the disease. She had extensive purpura, meningococci in the blood and purulent iridochoroiditis before serum therapy was begun. The purulent inflammation of the eye subsided after intravenous and intrathecal injection of serum. Within five months following treatment, an opacity of the lens developed, with complete loss of vision in the affected eye. This was secondary to contraction of the plastic exudate in the anterior part of the vitreous chamber, which caused a disturbance of the nutrition of the lens. In the second case (D. G.), the follow-up observation did not permit of detailed examination of the eye. The history obtained was that of complete blindness in one eye and strabismus, which developed shortly after discharge from the hospital and continued for seven months. Eventually there was slight improvement of vision, but the strabismus persisted.

There were two cases of hydrocephalus. In one (F. M., table 2), it was an entirely unsuspected sequel, as there was neither clinical nor laboratory indication at the time treatment was completed that hydrocephalus would develop. This patient gave no history suggesting a relapse after treatment or the occurrence of a second meningeal infection. In another case (M. M., table 2), hydrocephalus was present before the treatment was begun. C. E. (table 2), with mental deficiency, seen last at the age of 7 years, is the single instance of permanent mental impairment in the entire group of cases.

In the five patients in whom death occurred (table 3), one lived two months after treatment, one four months, one fifteen months, and two thirty-six months. P. M. (table 3), the infant who died fifteen months after treatment, was reported hydrocephalic at necropsy. This patient showed obstruction to the flow of cerebrospinal fluid during treatment and developed hydrocephalus before leaving the hospital. This was a complication rather than a sequel of the disease. In L. P. (table 3), treatment was begun late in the disease; no clinical improvement occurred under treatment, although the cerebrospinal fluid showed a diminution in the number of cells. Death occurred four months after discharge from the hospital. In the remaining three cases, the exact cause of death could not be determined from the reports available to us, although there were no indications that it was related to the meningeal infection.

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[1] McLean, Stafford; and Gilmartin, H. A.: Cerebrospinal Meningitis with Purulent Iridochoroiditis, Am. J. Dis. Child. **27**: 603 (June) 1924.

Table 4 shows the relationship of the incidence of sequelae to age at time of infection. The cases are divided into three groups representing the first half year of life, the second half year of life and patients more than 1 year of age. There is little difference in the percentage of sequelae in the three groups (21, 16 and 23 per cent, respectively). The mortality of 21 per cent in the youngest group, as compared with 8 and 0 per cent, suggests that after successful treatment in the first half year of life the prognosis as to survival is less favorable than in the two older groups.

Table 4.—*Relationship of Mortality and Sequelae to Age at Time of Infection*

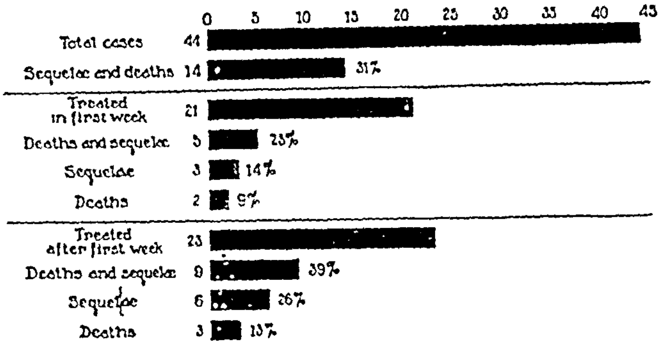
Age in Months	Total Cases	Normal Cases	Sequelae	Deaths	Total Unfavorable Cases
From 0 to 6 months...	19	11 (58%)	4 (21%)	4 (21%)	8 (42%)
From 6 to 12 months .	12	9 (75%)	2 (17%)	1 (8%)	3 (25%)
More than 12 months..	13	10 (77%)	3 (23%)	0	3 (23%)
Total	44	30 (68%)	9 (20%)	5 (11%)	14 (31%)

Various observers have stressed the necessity for the administration of serum early in the disease if a cure is to be expected, and the incidence of sequelae is to be minimized in those who recover. The influence of early and late treatment on the incidence of sequelae is represented in the accompanying chart. Cases in which treatment is carried out during the first week of the disease are classified as "early treatment," with due consideration for the obscurity of symptoms in the first months of life. Patients in whom treatment was not begun until one week after the onset of symptoms are classified as "late treatment." The occurrence of sequelae in 39 per cent of the cases of the second group as compared with 23 per cent in the first group suggests the value of early treatment in the prevention of sequelae, though observations in a larger number of cases would have greater significance

Table 5—*Data in Eleven Cases Treated by Cistern and Ventricular Injections*

Patients	Period of Observation	Present Age	Age at Time of Treatment	Day of Disease Treatment Began	Number of Days of Treatment	Total Amount in Cc of Serum Injected Intrathecally	Organisms: Culture	Organisms: Smear	Symptoms	Site of Treatment	Present Status
D H	10¼ mo	12 mo	5 wk.	2	5	137 and 30 intravenously	Positive	Positive	Convulsions	7 cistern punctures	Normal
R A . .	12 mo.	15 mo	3 mo	6	21	125	Negative	Positive	Bulging fontanel fever, irritability	5 ventricular punctures	Normal
J. N	7⅔ yr.	8 yr	4 mo.	18	7	140	Positive	Positive	Irritability, retraction of head, bulging fontanel	3 ventricular punctures	Normal
A J	2 yr.	2½ yr	6 mo	20	4	83	Positive	Positive	Fever, vomiting, retraction of head	1 cistern puncture	Normal
T W ...	3¼ yr.	4 yr	9 mo	16	4	97	Positive	Positive	Vomiting, tremors, convulsions	1 cistern, 1 ventricular	Normal
J M .	11 mo.	20 mo	9 mo.	2	4	95 and 40 intravenously	Positive	Positive	Drowsiness, rigidity of neck	4 cistern punctures	Normal
D K ...	19 mo	4 yr, 1 mo	2½ yr.	32	5	140	Positive	Positive	Strabismus, stupor, convulsions	3 cistern punctures	Normal
J. R	2⅔ yr.	3 yr.	4 mo.	14	17	123	Negative	Positive	Convulsions, fever, vomiting, rigidity of neck	3 cistern punctures	Deaf-mutism not noted on discharge
M M ..	22 mo.	2¼ yr.	5 mo.	5	6	120	Negative	Positive	Vomiting, large head, rigid neck	1 cistern puncture	Hydrocephalus
D L	3 yr.	3¼ yr.	3 mo.	5	4	120	Negative	Positive	Stupor, rigid neck, bulging fontanel	3 ventricular punctures	Death at 3¼ years, cause unknown
P. M	15 mo.	. 18 mo	3 mo.	6	23	162 and 40 intravenously	Positive; blood positive	Positive	Drowsiness, restlessness	3 cistern, 3 ventricular punctures	Death at 18 mo., necropsy hydrocephalus

The presence of obstruction to the flow of cerebrospinal fluid in the acute stage of meningitis is often indicative of permanent hydrocephalus as a sequel, and often makes impossible the injection of serum in sufficient amounts by the lumbar route. There seems to exist a prejudice against the administration of serum except by the lumbar route, even when blocking of this avenue of entry obviously indicates injection into the cistern or the ventricles. There were eleven such cases (table 5) in which the ventricles or the cisterna magna were resorted to for administration of serum. In the follow-up examinations, three of these eleven patients showed hydrocephalus. One of these succumbed fifteen months after treatment, and one was hydrocephalic when seen twenty-two months after treatment. Both had hydrocephalus before discharge from the hospital. Hydrocephalus in the third developed later and was severe at 7½ years of age. The remaining eight patients were free from hydrocephalus, and in none of these was there evidence of organic nerve lesion due to "needling" the ventricles or the cisterna magna, although in several instances serum was repeatedly injected by these routes. The two youngest patients in table 4 are good examples of the complete and permanent recovery after vigorous treatment by cistern and by ventricles.



Relationship of early and late treatment to sequelae and late mortality.

Of special interest is D. H.[2] (table 6) admitted to the hospital at the age of 35 days, who illustrates rather strikingly that even the youngest infant with blocking of the spinal subarachnoid space below the level of the cisterna magna may recover entirely from the infection and show no sequelae if proper treatment has been given. It might be expected that, in an infant of this age with sufficient blocking to require cistern treatment, hydrocephalus would be a probable sequel; but when the child was last seen, at the age of 12 months, eleven months after treatment, she was normal in every respect.

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[2] Reported in detail by Sturtevant, J. M.: Meningococcus Meningitis with Recovery in a Seven Weeks Old Infant, J. A. M. A. 86: 1436 (May 8) 1926.

Table 6.—*Data of Recovery Without Sequelae in Infant Aged Five Weeks, With Complete Obstruction of Subarachnoid Space, Treated Entirely Through the Cistern* *

		Cerebrospinal Fluid								
Day of Disease	Day of Treatment	Cell Count	Globulin	Sugar, mg. per 100 Cc.	Chloride, Mg. per 100 Cc.	Organisms	Cistern Therapy	Intravenous Therapy	Serum Rash
2	1	4,600	....	30	663	Yes	20	0	0
3	2	5,200	....	29	662	Yes	20	0	0
4	3	1,780	....	25	675	Yes	17	30	0
5 a.m.	4	1,900	....	35	675	No	20	0	0
5 p.m.	4	1,520	....	38	700	No	20	0	0
6	5	510	....	29	688	No	20	0	0
7	6	2,100	....	40	700	Yes	20	0	0
8	7	840	....	38	675	No	0	0	..
9	8	220	....	37	700	....	0	0	0
10	9	40	Trace	43	688	No	0	0	0
54	53	8	Trace	55	675	No	0	0	0
233	232	0	0	56	713	No	0	0	0

* Chief complaint, convulsions and vomiting twenty-four hours; no meningeal symptoms when first puncture was done; patient afebrile. Lumbar puncture indicated because of history of convulsions. Total serum, 167 cc. Treatment second day of disease with prompt improvement in fluid; no recurrence of symptoms; last two findings particularly interesting because of spinal fluid examinations on the 54th and 233d days. Infant survived two later severe infections, bronchopneumonia at the 54th day, and bacillary dysentery on the 233d day; normal one year after treatment.

R. A. (table 7) admitted at the age of 3 months, presented a similar case except that the serum was injected into the ventricles with five punctures on successive days. When last seen at the age of 15 months, one year after treatment, she was normal.

Table 7.—*Data of Infant Treated by Intraventricular Injection of Serum Because of Subarachnoid Obstruction* *

	Spinal Fluid						
Day of Disease	Amount, Cc.	Cells	Polymorphonuclears, per Cent	Lymphocytes, per Cent	Serum Given, Cc.	Site of Injection of Serum	Organisms
6	10	12,800	100	..	10	Lumbar spine	Yes
6	10	11,600	100	..	10	Lumbar spine	—
7	5	1,800	72	28	5	Lumbar spine	—
8	5	1,200	76	21	15	Ventricle	—
9	15	590	96	4	10	Lumbar spine	—
10	5	900	90	10	15	Right ventricle	—
13	10	960	92	8	10	Right ventricle	—
14	5	—	—	—	10	Left ventricle	—
17	5	175	20	80	..	Lumbar spine	—
23	5	175	18	82	..	Lumbar spine	—
27	25	80	27	73	20	Lumbar spine	—
28	15	105	25	75	..	Lumbar spine	—
29	7	1,580	22	78	..	Lumbar spine	0
30	..	.....	..	..	..	Both ventricles	—
35	10	150	17	83	..	Lumbar spine	0
43	15	88	23	77	..	Lumbar spine	0
55	5	.....	..	..	..	Lumbar spine	—

* Patient, R. A., aged 3 months. Treatment begun on the sixth day of disease. Total serum, 105 cc. Complete recovery; normal one year after treatment.

SUMMARY

1. Forty-four infants with sporadic meningococcus meningitis, from 35 days to 4½ years of age, treated with antimeningococcus serum and observed from one to ten years after treatment, developed the following serious sequelae in nine of the cases; deaf-mutism, four cases; hydrocephalus, two cases; visual impairment, two cases and mental deficiency, one case.

2. Five patients died during the period of observation.

3. Thirty are alive and normal in every respect.

4. Of eleven patients in whom serum was injected into the ventricles and cisterna magna because of obstruction of the subarachnoid space, eight made complete permanent recovery.

17 East Seventy-First Street.

TREATMENT OF IDIOPATHIC PURPURA HEMORRHAGICA

BY EXPOSURE TO MERCURY VAPOR QUARTZ LAMP: PRELIMINARY REPORT *

J. W. SOOY

AND

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The treatment advocated for idiopathic purpura hemorrhagica is entirely symptomatic in nature, with chief emphasis placed on checking the hemorrhage and replacing the lost platelets. Heretofore, the most satisfactory method of treatment has been the transfusion of blood, although the beneficial effects are usually transient.

In their study of the effect of light and of darkness on the constituents of the blood, Laurens and Sooy[1] have observed a stimulating influence of direct sunlight and an inhibitory influence of darkness on the number of red blood cells and platelets in white rats. Furthermore, they[2] have observed a more pronounced stimulation of these elements of the blood after exposure of white rats to the mercury vapor quartz lamp. This stimulating influence of light therapy on the blood platelets was quite obvious after three daily exposures of six minutes at a distance of 2 feet.

This knowledge, with the fact that the most characteristic pathologic finding in idiopathic purpura hemorrhagica is a reduction in the blood platelets, suggests a more rational method of treatment. Furthermore, it is suggestive that other hemorrhagic conditions associated with a deficiency in the blood platelets might respond to similar methods. On this basis, we have applied the mercury vapor quartz lamp with benefit in the treatment of idiopathic purpura hemorrhagica, in hemorrhagic disease of the new-born, and in the preoperative preparation of jaundiced patients showing a platelet deficiency and a tendency to bleed.

It is our purpose in this communication to make a preliminary report of the results of the treatment of idiopathic purpura hemorrhagica by exposure to the mercury vapor quartz lamp. During the last year, we have treated ten cases of this disease. One half of these cases have been observed during an acute phase, while the remaining ones have been of the chronic variety. In two instances, the treatment was used as a method for the preoperative preparation of patients in need of surgical attention; in one instance, for the extraction of several teeth in a woman who had bled profusely for three days after a recent tooth extraction, and in a second patient with a marked hemorrhagic diathesis, on whom a tonsillectomy was indicated. These procedures were followed by a normal convalescence free from bleeding.

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* From the Department of Surgery, Yale University School of Medicine, and the Surgical Clinic of the New Haven Hospital.

[1] Laurens, Henry; and Sooy, J. W.: The Effect of Light and of Darkness on the Blood Cell Number of the Growing Albino Rat, Proc. Soc. Exper. Biol. & Med. 22: 114 (Nov.) 1924.

[2] Laurens, Henry; and Sooy, J. W.: Unpublished data.

A complete report of this group of cases is now being prepared. In this communication, a typical case will be reported briefly in order to give a concrete illustration of the changes in the blood picture and the progress of the disease during treatment by this method.

METHOD OF TREATMENT

The method of treatment in these cases has been as follows:

On the first day the patient was given two exposures of six minutes each, at a distance of 13 inches, on the entire dorsal and ventral surfaces of the body. The exposures were increased daily by three minutes for five days, after which the exposure may be increased in daily increments of ten minutes. It is rarely necessary to increase the exposure beyond twenty-eight minutes.

This procedure gives a massive exposure and may produce a somewhat painful hyperemia. In such cases, the treatment is omitted on the following day. No serious burns have been observed.

REPORT OF CASE

A girl, aged 12, was referred to the New Haven Hospital, June 4, 1925, by Dr. William McGuire, with the complaint of frequent bleeding from the nose. The family and personal history were irrelevant.

Effect of Mercury Vapor Quartz Lamp Treatment on Blood Findings

Date	Treatment in Minutes*	Red Blood Cells	Platelets	Minutes Coagulation Time	 Bleeding Time	 Complete Retraction
6/ 4/25	4	2,500,000	108,000	5	28	90
6/ 6/25	4	2,500,000	138,000	5	21	86
6/ 8/25	4	2,500,000	242,000	4	12	59
The patient had a severe cold and did not come to the hospital for treatments. June 13, 1925, she had slight epistaxis						
6/13/25	12	2,200,000	152,000	5	22	76
6/15/25	12	2,600,000	192,000	5	21	75
6/17/25	12	2,900,000	206,000	4	15	69
6/19/25	12	3,200,000	320,000	4	11	51
6/21/25	12	3,400,000	406,000	4	11	48
6/23/25	12	3,600,000	500,000	4	10	48
6/25/25	12	3,900,000	546,000	4	7	41
6/26/25	Treatments discontinued					

* The figures represent the duration of each exposure as given on the dorsal and ventral surfaces of the body.

The present illness commenced three years previously, with occasional slight bleeding from the nose. The bleeding was small in amount, and occasionally came on while the patient was asleep. The bleeding gradually became more frequent and more profuse. One year previously, the bleeding came on about twice a week. Since that time she had rarely had a free interval longer than three days. She had frequently bled as often as twice a day. The bleeding was usually small in amount, its duration varying from two to fourteen hours.

In January, 1925, the patient bled for three hours from a small laceration, in spite of attempts to control it by pressure. A few weeks later, she bled profusely following the extraction of two lower molar teeth. The bleeding stopped after an intramuscular injection of whole blood.

May 11, epistaxis commenced and continued for the ensuing twenty-nine hours. She was confined to bed for three weeks. She had had two subsequent severe hemorrhages; during the latter, she was seen by Dr. McGuire, by whom she was referred to the New Haven Hospital.

She was quite pale and anemic. The nostrils were packed with blood stained cotton. There were numerous petechiae and ecchymoses over the trunk, back and extremities. They varied in size from minute spots up to ecchymoses 5 cm. in diameter. The physical examination was otherwise negative.

Blood examination showed: red blood cells, 2,500,000; platelets,[3] 108,000; white blood cells, 11,600 per cubic millimeter. *Coagulation time*[4] was five minutes, and bleeding time twenty-eight minutes. Complete retraction of the clot required ninety minutes. The diagnosis was idiopathic purpura hemorrhagica.

Treatment with the mercury vapor quartz lamp was commenced immediately. The effect on the treatment is shown in the accompanying table.

Feb. 13, 1925, the patient was able to attend school for the first time in three years. Her general condition had been good. There had been no clinical manifestations of purpura. The blood platelet count had remained normal. At the present time, the blood examination shows: red blood cells, 4,100,000; platelets, 468,000; white blood cells, 9,100 per cubic millimeter; bleeding time, four minutes; coagulation time, five minutes; complete retraction of clot, thirty-nine minutes.

SUMMARY

The experimental work of Laurens and Sooy has demonstrated a definite increase of the blood platelets after irradiation of white rats with the mercury vapor quartz lamp, and offers a rational basis for the application of this method to the treatment of certain hemorrhagic diseases associated with a platelet deficiency. We have treated cases of idiopathic purpura hemorrhagica by exposure to the mercury vapor quartz lamp with definite beneficial results.

The case reported here illustrates the effect of this treatment on the disease. When the patient was first seen, June 4, 1925, the platelet count was 108,000 per cubic millimeter. She was given five daily exposures to the mercury vapor quartz lamp. On the fifth day, the platelet count was 242,000 per cubic millimeter. On account of a severe cold, the patient did not appear for treatments until five days later. At this time, the platelet count had fallen to 152,000, and there was slight epistaxis. Daily treatments were commenced, and after twelve days (June 25) the platelet count had risen to 546,000 per cubic millimeter. The treatments were discontinued about eight months ago, and there have been no further evidences of the disease. The blood platelet count has been maintained at the normal level.

The number of cases that have come under our observation has been small, and on account of the relatively short time interval absolute conclusions cannot be drawn. However, the results are favorable in comparison with other methods of treatment. We hope that this report will stimulate further study, so that the value of this application of the mercury vapor quartz lamp may be accurately determined.

Further investigation is in progress, and a detailed report of all cases observed will be made in a later communication.

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[3] *The platelets* were counted by the method described by J. W. Sooy and Henry Laurens (A Method for Counting Blood Platelets in the Rat, Proc. Soc. Exper. Biol. & Med. **22**: 116 [Nov.] 1924) modified for clinical use. The normal count is between 400,000 and 600,000 per cubic millimeter.

[4] The coagulation time and complete retraction time were determined in all instances by a new capillary tube method that will be described in an early report. By this method the coagulation time in the majority of normal individuals falls between five and eleven minutes, and the time for complete retraction between thirty and forty-five minutes. The bleeding time was determined by Duke's method.

Tuberculosis and Cancer.—It will be seen that tuberculosis has killed 96.7 per cent of its total victims before they reach the age of 65, while cancer at the same age has secured only 60 per cent of its total victims.—Newsholme, Arthur: Present Position of Tuberculosis Problem, *Lancet,* May 29, 1926.

SCARLET FEVER FOLLOWING NOSE AND THROAT OPERATIONS *

BEATRICE R. LOVETT, M.D.
CHICAGO

An interesting and rather frequent type of surgical scarlet fever is that following operations on the mouth, nose and throat. The wound in these cases is in the region most likely to harbor streptococci, and corresponds to the portal of entry for ordinary nonsurgical scarlet fever. One would therefore expect the infection to be more frequent than after operations elsewhere. Of forty-eight cases classed as surgical scarlet fever at the Durand Hospital, from 1902 to 1926, twenty followed operations, thirteen of which were on the nose and throat. The development of the disease in these patients may of course be merely a coincidence, but from their frequency, some relationship between the operation and the scarlet fever seems probable. Occasionally, the patient may be infected by the operator or instruments, as in an instance described later. He may harbor the organisms in the nose or throat previously, but resist their invasion until the open wound gives them an opportunity to enter the tissues in large numbers. Or the operation may simply facilitate subsequent infection from the outside, either from a person with scarlet fever or from a carrier of the streptococci.

In the literature, there are numerous examples of scarlet fever following tracheotomy. In 1892, Koch[1] reported fifteen such cases in children with diphtheria. These occurred in the form of an epidemic, and a few children who were not operated on also had the second disease. Sörensen[2] reported the cases of three sisters with diphtheria; the two older ones had tracheotomies followed in a few days by attacks of scarlet fever, while the youngest, not operated on, escaped. Davidovitch[3] saw three cases of scarlet fever occurring four, eight and eighteen days, respectively, after tracheotomy. The interval in the last case is, of course, rather long for any connection between the two events. Port[4] observed a patient who developed scarlet fever eight days after a tracheotomy, not for diphtheria.

In addition to the tracheotomy cases, Davidovitch[3] saw a case of scarlet fever, which began three days after an operation for a tumor of the gums. Gussenbauer[5] reported the removal of a papilloma of the tongue, with the early symptoms of scarlet fever beginning on the following day. In another report,[6] the physician performed a tonsillectomy for a child ten weeks after the onset of scarlet fever, and, after merely washing the instruments with alcohol, used them for another patient. The latter had a sore throat and fever three days later, followed by the typical eruption and desquamation.

Of the thirteen cases at the Durand Hospital, there were seven instances of scarlet fever following operations for cleft palate, two following resections of the nasal septum, and four following tonsillectomies. The intervals between operation and the first symptoms of the disease were: in two cases, two days; in six cases, three days; in two cases, four days, and in three, a few days. All patients had typical scarlet fever, and most of the cases were of the septic type. Complications were unusually numerous, including two instances of bilateral otitis media, two of unilateral otitis media, and two of sinus infections, making a total of six complicated cases in the series of thirteen. One patient, previously operated on for harelip and cleft palate, died following sloughing of the wounds, with profuse purulent discharge and double otitis media. Four nurses caring for this child caught the infection from him. In most of the cleft palate cases, there was sloughing of the tissues and imperfect closure of the defect, so that, although the wounds healed eventually, the operations were not very successful.

The occurrence of scarlet fever in children following operations especially on the nose and throat suggests the wisdom of testing and immunizing the patients beforehand. This is particularly advisable preceding cleft palate operations, since most of the patients are at a susceptible age, and if scarlet fever develops, complications are frequent, and the results of the operation are poor.

637 South Wood Street.

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* From the John McCormick Institute for Infectious Diseases.

[1] Koch: Ein Beitrag zur Kentniss des chirurgischen Scharlachs, Thèse de Bâle, 1892, cited by de Bovis, R.: Actualités médico-chirurgicales: La scarlatine traumatique, Semaine méd. **22**: 33 (Jan. 29) 1902.

[2] Sörensen, T. C.: Om Scarlagensfiberens Inkubationstid, Hospitalstid. July 4, 1888, pp. 673 and 678, cited by de Bovis.

[3] Davidovitch, N.: Ueber Scarlatina traumatica, Jahrb. f. Kinderh. **67**: 143 (Supp.), 1908.

[4] Port, F.: Ueber Wundscharlach, München. med. Wchnschr. **69**: 1691 (Dec. 8) 1922.

[5] Gussenbauer, C.: Sephthaemie, Pyohaemie und Pyo-Sephthaemie, Deutsche Chir. von Billroth und Lucke **4**: 132, 1882.

[6] Otto: Beitrag zur Frage des Wundscharlachs, München. med. Wchnschr. **70**: 301 (March 9) 1923.

Clinical Notes, Suggestions, and New Instruments

AN INTERESTING RESULT FROM THE USE OF PARATHYROID EXTRACT IN A CASE OF OSTEITIS DEFORMANS (PAGET'S DISEASE)

Anthony Bassler, M.D., New York

Suggested by the work of Collip on parathyroidectomized dogs in which the administration of extracts of parathyroid glands raised the calcium content of the blood, this substance was employed in a case of osteitis deformans with a happy result.

Nov. 6, 1923, a retired business man, aged 66, came to seek help for a case of well developed Paget's disease. His mother had died at 72, following a fracture of the hip, and his father at 59, of pneumonia. He had two brothers and one sister, all younger than he and all well. There was no personal history of past illness except scarlet fever at the age of 7 which destroyed the sight of his left eye. About six years previously he noticed a slowly developing stiffness and weakness in his legs between the ankles and knees, which gradually ascended into both thighs. He recorded that the trouble began rather abruptly, but its progress was steady. His habits, appetite and bowel movements were normal, but he was suffering from insomnia—not sleeping more than four hours in a night. He stated that in the past year his head had become larger, and occasionally he had a transitory headache. His family thought he was getting shorter in height and he could walk only six blocks at a time and that very slowly.

Examination disclosed many old-fashioned gold caps in his mouth, but roentgen-ray examination of the apexes and roots was negative. The fundi disclosed distinct "silver wire arteries," with some bulbous formation in the veins where the arteries crossed them. There was distinct palpability of the brachials and femorals (arteriosclerosis), and the blood pressure was 130 systolic and 80 diastolic. The liver was slightly enlarged and firmer than normal, and the prostate was enlarged laterally and was firm. The head was moderately triangular, the skull seemingly enlarged. From hips to ankles the lower extremities were markedly bowed anteriorly and laterally, with numerous hyperostotic nodules on the tibias. On getting up from the prone position to standing, he was cautious and slow, and his length showed a shortening of 1⅜ inches (3.5 cm.) in the upright position.

The roentgen-ray examination proved the typical bending of the long bones of the lower extremities, with more curving in the tibias and fibulas than in the femurs. The arm and forearm bones were not involved. All the bones of the lower extremities were much thickened with apparent filling in of the medullary canals. The abdominal roentgenogram showed a moderately dilated stomach, an ileac stasis and a colitis.

Laboratory examinations showed: a negative Wassermann reaction; hemoglobin, 92; index 0.95; normal red blood cell count, leukocytes, 8,100, with normal differential. The stool and urine were normal. The blood chemical findings were: urea nitrogen, 17.5 mg.; sugar, 0.05 per cent; creatinine, 1.2 mg.; uric acid, 7.2 mg.; nonprotein nitrogen, 27 mg.; cholesterol, 0.16 per cent; chlorides, 0.47 per cent. No estimation of the blood calcium was made.

In the treatment from Nov. 19, 1923, to March 24, 1925, the following methods were tried without benefit: intravenous radium, pulverized egg shells taken internally, lime and soda hypophosphite tonics, thyroid extract, potassium iodide and several combinations of gland extracts, but none containing parathyroid.

In March, 1925, he went to England to consult the various physicians there with the idea that Sir James Paget, who described the disease in that country in 1877, probably had awakened an interest in it on the part of his countrymen and that the best help could be obtained there. At the time, he was only able to hobble about the house and had to use two canes on account of extreme weakness in his legs. After a number of consultations with no encouragement as to possible benefit from any method of treatment known to the English physicians, he prepared to return to America. Just before he was to sail, while he was walking across the room with only one cane, the left femur spontaneously fractured, which laid him up in England for nine weeks, and he had to use two crutches all summer. Apparently, however, there was a practical union of the fracture.

He returned to my office, Jan. 11, 1926, just able to stand with two canes and move about very slowly and carefully. He had gained 12 pounds (5.4 Kg.) during his inactivity, now weighing 167 pounds (75.7 Kg.) dressed. With the idea that if the calcium content of the blood was raised the bones might be benefited, he was given parathyroid tablets-Armour of ⅒ grain (0.006 Gm.), one after every meal. Within a week he felt much stronger, seemed to walk better and moved about with more assurance. His progress has been steady and, March 10, 1926, after taking the parathyroid for about eight weeks, he reported that he walked two miles and more each day and used a cane only when out. He had lost 6 pounds (2.7 Kg.). He felt much stronger and was perfectly well in every way. He also said: "Before I took these tablets I was getting steadily worse, but it was so slow that I could not make comparison from day to day or even week to week, but month by month the contrast was noticeable. Since January, I have surely been feeling no worse as far as deformity is concerned; in fact, I feel it is less although it is so bad it is hard to say. However, I feel much stronger and can get about remarkably well now."

What the parathyroid did in bringing this about, it is not possible for me to say. It is regrettable that an estimation of the blood calcium was not made before beginning with the tablets. But this much is definite, that in this case of steadily progressing Paget's disease no treatment was of any value up to the moment the parathyroid was started, and that within a short time after its use was established a most marked change for the better occurred. While I am aware that in not a few cases of Paget's disease a cessation of the disorder may take place, in this instance I feel it is most logical and reasonable to believe that the improvement was due to the parathyroid extract.

I am reporting the case in the hope that this substance will be used in other cases and the results recorded.

21 West Seventy-Fourth Street.

A NEW TOWEL CLAMP

W. W. Nauth, M.D., Winona, Minn.

This instrument has certain advantages over those at present in use. Practically all towel clamps on the market today are constructed on either the scissor action or crossed spring action principle. With either construction, it is obvious that the handles or spring action act or operate in the same plane as that of the jaws, making it impossible to grasp the edge of the incised wound without either the instrument lying parallel and close to the incision or having the handles set at right angles to the body surface, thus interfering in either instance with the operator's work.

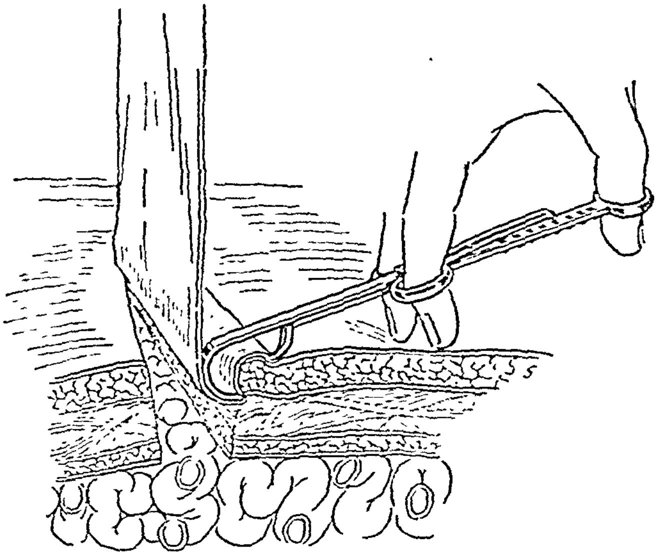

Fig. 1.—Cross section of abdominal incision with towel in position, rolled over edge of wound, and clamp ready to lock by compressive motion between thumb and two fingers.

The improvement embodied in this clamp consists of a construction which, when in use, will lie flat on the body surface, and at right angles to the incised wound. The downward curved upper member provides a method for grasping a much thicker section of the edge of the wound, at the same time rolling the towel over the edge of the incised wound, thereby insuring a more complete covering of the skin, such as cannot be obtained by any other towel clamp.

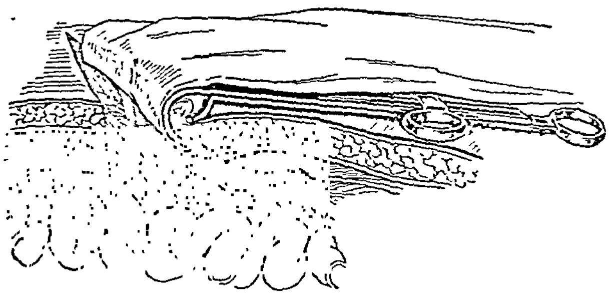

Fig. 2.—Clamp locked, lying flat on abdomen with towel folded over, covering instrument completely.

The towel in position, with clamps securely applied, may also be used as a very effective retractor. In thin patients it is possible to grasp practically the entire thickness of the abdominal wall within the opposing jaws of the instrument.

The instrument is easy to use, manipulation consisting of a compressive motion between the thumb and the index and middle fingers, for closing and locking the clamp, and a separative motion to unlock and open the opposing jaws automatically.

It is manufactured of a composition metal, nonrustible and nonstainable to a high degree, and can be readily taken apart for cleaning purposes. From four to six clamps are required to protect adequately an ordinary sized wound from contamination.

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

BERNARD FANTUS, M.D.
Associate Clinical Professor of Medicine, Rush Medical College
CHICAGO

(Continued from page 33)

Hot Vaginal Irrigation: Prolonged hot vaginal irrigation (at 115 F.—as hot as can be borne) is employed chiefly for the production of hyperemia, not only in the parts immediately touched by the water but also in adjoining portions, such as the internal generative organs. It has an analgesic action, hastens the absorption of exudate, and favors limitation of inflammation. Such prolonged hot douching is usually not well borne in the presence of fever; and in general, should not be employed in fresh inflammatory processes;[70] it is usually contraindicated by bleeding of the uterus or its adnexa, though brief hot or cold irrigation may be used. As large quantities of plain water are not well tolerated by the vaginal mucosa, it is advisable to add to each liter of water 1 tablespoonful of sodium chloride, or 1 teaspoonful of alum, or a teaspoonful of compound solution of cresol. At least 4 liters of fluid should be employed at a time, and several times that much when the greatest possible effect is desired, the irrigation being continued for from fifteen to thirty minutes. Hence, as large an irrigating reservoir as possible should be used, and a douche pan with an outflow tube connected by rubber tube to a slop pail. An elevation of the irrigator by from 2 to 3 feet is sufficient. Excessive pressure might force fluid into the uterus. The patient must be in the recumbent posture, the knees flexed, either on a douche pan or in an empty bath tub. This irrigation connot be taken with the patient sitting on a toilet. The vagina should balloon up during the douche, thus allowing the solution to come in contact with its whole surface. In chronic cases, with ambulatory patients, an irrigation once daily may suffice; and it is then best taken at bed time. To bed patients, irrigations are ordinarily given twice daily. In severe cases, they may be administered every six hours or even oftener. As this is one of our most important nonoperative therapeutic procedures in gynecology, and success depends entirely on the proper technic, the following directions given by Crossen[71] to the person who is to administer the irrigation to the patient might with advantage be quoted almost verbatim:

> Get a teakettle of boiling water and a large pitcher of warm water, as warm as the douche may be comfortably begun with (about 105 F.). Put a piece of oil cloth on the bed, and on this an ironing board. Put the douche-pan on the lower part of the board and a quilt on the upper part to make it comfortable for the patient and allow a pillow for the head. If the upper edge of the douche-pan is uncomfortable, cover it with a folded towel. The outflow tube of the douche-pan leads into a bucket beside the bed. When the patient is arranged, the hips should be considerably higher than the rest of the body. Take the douche-nozzle out of the compound solution of cresol, rinse off in the pitcher of douche-water, attach the nozzle to the douche tubing, and introduce it into the vagina. Pour some of the warm water from the pitcher into the douche-bag and allow it to run. If some air runs from the douche tube into the vagina, that is beneficial, for it helps to separate the walls. As the patient can take the water warmer and warmer, increase the temperature, bringing it up to 115 F. if this is not too uncomfortable. Keep up the hot irrigation, ordinarily for thirty minutes or more, using as much water as necessary to maintain the irrigation for that length of time. The water runs slowly (only 2 or 3 feet elevation) and 3 or 4 gallons is usually enough. After the irrigation, the patient slides over to another part of the bed while the douche-pan, etc., is being removed, and should remain quiet for at least an hour.

Medicated Douches: As has been indicated, it is best to medicate somewhat even "simple" douches or irrigations. More strongly medicated solutions may be employed at the conclusion of an irrigation, or for special purposes by themselves. The ingredients for such douches should be prescribed either in pure form or in concentrated solution, to be diluted before use.

For an antiseptic douche, compound solution of cresol may be ordered, a teaspoonful or two to be added to a liter of water, giving a solution of approximately 0.5 to 1 per cent. This is probably the most eligible agent for the purpose. Should its odor—which indeed is one of its advantages, as it is not likely to be mistaken for something else—be objected to, a concentrated mercuric chloride solution may be prescribed, which is probably safer than the more convenient poison tablets of corrosive mercuric chloride—for a tablet, to many of the laity, means something ready to swallow. One might write the following prescription: mercuric chloride and ammonium chloride, of each 6 Gm.; methylthionine chloride (methylene blue), 0.001 Gm.; water to make 240 cc. Directions: For external use only. Tablespoonful to 2 quarts of hot water to be used as lotion as directed. This yields an approximately 1:5,000 solution.

For astringent effect, alum, 1 per cent (2 teaspoonfuls to a liter of water) answers most requirements. If a less irritant astringent is desired, solution of aluminum acetate (N. F.) may be prescribed, a wineglassful (50 cc.) to a liter of hot water. Glycerite of tannic acid (1 tablespoonful to each liter of water) or zinc sulphate (1 teaspoonful to each liter of water) yields a rather strong astringent douche.

As a deodorant, e. g., in carcinoma of the uterine cervix, potassium permanganate solution, 1:2,000, is useful. This may be prescribed by ordering, e. g., sixteen doses of 0.5 Gm. of the salt per tablespoonful of water, which is to be added to 1 liter of water and used as a douche.

Pigments and Tampons.—"Office treatment" of diseases of women, consisting chiefly of painting the affected parts with concentrated solutions and inserting tampons, has been much abused in the past by being given in acute inflammatory conditions in which it can only do harm, by being employed in various chronic diseases that can be cured only by operation, and by converting a neurasthenic or hysterical patient into a confirmed invalid by fixing the patient's attention on a possibly trivial disturbance in the genital tract. However, there still remains a field of usefulness for it in properly selected conditions. Pigments are applied, after exposure of the part with a speculum, by means of cotton tipped applicators or dressing forceps. The treatments are usually repeated every three or four days.

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* This is the twenty-eighth of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

[70] "In gonorrhea of the female, no local therapy should be employed for the first three weeks" (G. A. Wagner in Halban and Seitz: Biologie und Pathologie des Weibes **5**, first part, p. 485).

[71] Crossen, H. S.: Diagnosis and Treatment of Diseases of Women, St. Louis, C. V. Mosby Company.

For antiseptic and astringent action in the treatment of ulcers, erosions and bleeding areas, silver nitrate (from 2 to 10 per cent) and copper sulphate solution (from 5 to 10 per cent) are generally used. The silver salt is perhaps the most efficient of these, but it has the disadvantage of discoloring the clothing. For disinfection of chancroid, thorough cauterization with liquefied phenol, preceded by a local anesthetic and followed by an antiseptic dusting powder, is probably best. The deeper action of nitric acid is usually not required and is much more painful. Tincture of iodine (U. S. P., 7 per cent) or the "stronger tincture of iodine" (N. F., 17 per cent) known as Churchill's tincture may be used as an antiseptic and stimulant to chronically inflamed areas, ulcers or erosions. Its application to the vaginal vault in chronic pelvic inflammation for a supposed counterirritant effect has been largely abandoned for more effective measures.

To "deplete" by hygroscopic action swollen, inflamed and congested pelvic tissue, thereby relieving pain and soreness, glycerin pure or variously medicated is applied to the upper part of the vagina by means of tampons. A vaginal tampon may be left in place from twelve to twenty-four hours, not longer, as it becomes offensive. It is removed by the patient by means of the string attached to the tampon, which had been left hanging from the vagina. Its removal is to be followed by a cleansing douche. That these glycerin tampons generally have marked effect on the vaginal tissue fluids is shown by the fact that they excite so profuse a discharge that it is necessary for the patient to wear a sanitary napkin to protect the clothing.

A tampon is simply a compress used in a cavity. The vaginal tampon is a wad of absorbent cotton, gauze or lamb's wool, with a short string attached about its center. For mechanical purposes, lamb's wool is preferable; for medication, absorbent gauze or cotton. They must, of course, be sterile, and should be introduced aseptically. When tampons are used to check hemorrhage, they should first be dipped in an antiseptic solution, squeezed as dry as possible, and then packed into the vagina.

For medication, the tampon is saturated in its upper, first introduced, portion with glycerin carrying various medicinal agents. For antiseptic action, glycerite of boroglycerin (31 per cent boric acid) is most commonly employed; or else mild silver protein, from 10 to 25 per cent, or strong silver protein, 2 per cent. For astringent action, the glycerite of tannic acid (20 per cent) probably answers all requirements. Soothing or astringent powders may be applied by means of a powder blower directly to the vaginal mucous membrane exposed by a speculum, or by means of a tampon liberally dusted with the powder, or carrying powder in its folds.

Of late, tampon capsules have been introduced. These can be applied by the patient at her home best at night immediately before retiring, while previously tampon treatment required trips to the physician's office. They are gelatin capsules, the size of a thumb and larger, containing wool with a string attached. If they are not previously medicated, the cap is removed by the patient just before use; a teaspoonful of the desired medicament is poured on; the cap replaced, and the capsule moistened with warm water introduced, medicated end first, up to the vaginal vault. It should be held in position for a minute or two, when it will be found that the capsule has dissolved and the tampon is fixed in place. Tampon capsules, variously medicated with agents commonly used for the purpose, are on the market.

Suppositories and Tablets.—Vaginal suppositories, also known as medicated pessaries, are globular or egg shaped, weigh from 4 to 6 Gm., and are made with cacao butter rather than glycerogelatin, as the latter is liable to mat the pubic hair. They are perhaps chiefly of use in the treatment of vaginitis of children, in those cases in which other and more effective measures cannot well be employed.

Tablets of antiseptic or astringent agents are sometimes used in the intervals between douches; but, as the vagina is seldom affected primarily and the effect of these tablets is limited to the vaginal mucous membrane, they are of very limited clinical value. The danger from absorption of poisonous agents by the vaginal mucosa must also be borne in mind in connection with their use.

(To be continued)

New and Nonofficial Remedies

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application. W. A. Puckner, Secretary.

TRIBASIC CALCIUM PHOSPHATE.—Calcii Phosphas Tribasicus.—Tertiary Calcium Phosphate, $Ca_3(PO_4)_2$. Tribasic calcium phosphate contains approximately 85 per cent of $Ca_3(PO_4)_2$.

Actions and Uses.—Tribasic calcium phosphate has been proposed for use as an antacid. It has the advantage over alkaline hydroxides such as magnesium hydroxide and alkali carbonates such as sodium bicarbonate, in that, being insoluble, it neutralizes the excess of acid in the stomach but does not produce systemic alkalization. It has been claimed that tribasic calcium phosphate is somewhat constipating.

Dosage.—From 1 to 5 Gm. (15 to 75 grains).

Calcium Phosphate Tribasic-P. W. R.—A brand of tribasic calcium phosphate-N. N. R.

Manufactured by Powers-Weightman-Rosengarten Co., Philadelphia. No U. S. patent or trademark.

TRIBASIC MAGNESIUM PHOSPHATE. — Magnesii Phosphas Tribasicus.—Tertiary Magnesium Phosphate, $Mg_3(PO_4)_2.7H_2O$. Tribasic magnesium phosphate contains approximately 70 per cent $Mg_3(PO_4)_2$. The product is partially dehydrated.

Actions and Uses.—Tribasic magnesium phosphate has been proposed for use as an antacid. It has the advantage over alkaline hydroxides such as magnesium hydroxide and alkali carbonates such as sodium bicarbonate in that, being insoluble, it neutralizes the excess of acid in the stomach, but does not produce systemic alkalization. It has been claimed that tribasic magnesium phosphate has a laxative action.

Dosage.—From 1 to 5 Gm. (15 to 75 grains).

Magnesium Phosphate Tribasic-P. W. R.—A brand of tribasic magnesium phosphate-N. N. R.

Manufactured by Powers-Weightman-Rosengarten Co., Philadelphia. No U. S. patent or trademark.

SILVOL (See New and Nonofficial Remedies, 1926, p. 373).

The following dosage forms have been accepted:

Silvol Bougies 5 Per Cent: Bougies weighing 0.81 Gm. (12.5 grains) and containing silvol 5 per cent in a base composed of oil of theobroma, wool fat, white wax, acacia and glucose.

Silvol Ointment 5 Per Cent: Silvol, 5 per cent in a base composed of petrolatum, wool fat, benzoinated lard and white wax.

Vaginal Suppositories Silvol 5 Per Cent: Suppositories weighing 8.45 Gm. (130 grains) and containing silvol, 5 per cent, in a base composed of gelatin and glycerin.

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SATURDAY, JULY 10, 1926

THE FUNCTION OF THE SWEAT GLANDS

It was many years ago that the skin—and the sweat glands in particular—were supposed to act vicariously for the kidneys as an excretory organ when the renal tissue is incapacitated for its normal function. Thus, according to a popular textbook of the middle of the last century,

> The cutaneous and urinary excretions seem to be vicarious, not merely in regard to the amount of fluid which they carry off from the blood, but also in respect to the solid matter which they eliminate from it. It appears that at least 100 grains of effete azotized matter are daily thrown off from the skin; and any cause which checks this excretion must increase the labor of the kidneys, or produce an accumulation of noxious matter in the blood. Hence attention to the functions of the skin, at all times a matter of great importance, is peculiarly required in the treatment of urinary diseases.

In the subsequent period physiology has learned that the ability of the skin, aside from the sebaceous glands, to eliminate substances other than water has been overestimated and misunderstood. There can be no replacement of the renal activities through cutaneous function in the way formerly assumed. On the other hand, the importance of the skin in the elimination of water with its consequent influence on the regulation of body temperature has been adequately appreciated only of late. It is realized that there is a partition of water elimination between the kidneys, lungs and skin that seems to be effected above all by the intake of fluid, by the genesis of heat within the body through muscular exercise, and by the environmental temperature. The last two factors determine in a way the degree of heat elimination or conservation that may be required to prevent undue changes in the temperature of the body.

There are animal species, such as the dog and the cat, that meet the demands of varying heat regulation primarily through devices other than the excretion of water by way of sweat glands. Consequently the function of the latter is not to be regarded as a universal biologic necessity. That life is possible without sweat glands even in man has been demonstrated by a number of persons exhibiting a congenital ectodermal defect represented by the complete absence of sweat glands—icthyosis hysterix.[1] Generally speaking, such persons placed in rooms of various temperatures react like normal persons until the air has risen above the point at which the sweat production usually comes into play. After that, they are unable to dissipate the body heat with sufficient rapidity, and the inevitable result is a rise in body temperature.[2]

Du Bois [2] has pointed out that there may be an active as well as a passive transfer of water from the interior to the exterior of the body. As he expresses it, sweating is a different matter from the mere evaporation of water from the nonsweating skin. There seems to be a sudden functioning of the sweat glands whenever the air temperature reaches about 30 to 33 C. (86 to 91.4 F.) or whenever there is a marked discrepancy between the total required heat elimination and the amount that can be disseminated by radiation and conduction and the ordinary vaporization from skin and lungs. Any excess must be taken care of by sweating or else there will be a higher body temperature than is called for by the temperature regulating mechanisms or by the heat center, if there, indeed, is one.

Accordng to Soderstrom and Du Bois,[3] for an average temperature of from 22 to 25 C. (71.6 to 77 F.) and from 30 to 50 per cent humidity, normal men and patients with various diseases lose on an average 24 per cent of their calories by the vaporization of water through the skin and air passages. The average daily loss in their tests was 700 Gm. Even cardiac and nephritic patients give figures close to the normal. In the case of persons with congenital absence of sweat glands, Richardson [4] has found that under resting conditions 28 per cent of the total heat produced was eliminated in the form of water vapor, or very close to the normal average of 24 per cent found by Soderstrom and Du Bois. Less than 30 per cent of the vapor came from the lungs, and the remainder from the skin.

These painstaking studies at the Russell Sage Institute of Pathology thus confirm the belief that diffusion of water occurs through the skin from which vapor can be given off independently of the sweat glands. In this respect, in the absence of sweat, the human body "responds to the laws of physics and resembles so much meat." It is accordingly inferred by Richardson that in normal persons under ordinary resting conditions the liberation of water vapor likewise takes place without the medium of the sweat glands. If either heat production or the surrounding temperature is raised, there occurs at a certain point a sharp rise in the elimination of water, followed shortly by an outbreak of visible sweat. The study of persons devoid of sweat glands confirms the theory that these structures constitute an emergency apparatus that is called on only under exceptional conditions—a long step from the views of the earlier physiologists.

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[1] Such persons are described by Loewy and Wechselmann: *Arch. f. path. Anat.* **206:** 79, 1911. Mackee, G. M., and Andrews, G. C.: Congenital Ectodermal Defect, Arch. Dermat. & Syph. **10:** 673 (Dec.) 1924.

[2] Du Bois, E. F.: Basal Metabolism in Health and Disease, Philadelphia, Lea & Febiger, 1924.

[3] Soderstrom, G. F., and Du Bois, E. F.: Clinical Calorimetry, XXV, The Water Elimination Through Skin and Respiratory Passages in Health and Disease, Arch. Int. Med. **19:** 931 (May) 1917.

[4] Richardson, H. B.: Clinical Calorimetry, XL, The Effect of the Absence of Sweat Glands on the Elimination of Water from the Skin and Lungs, J. Biol. Chem. **67:** 397 (Feb.) 1926.

THE DIAGNOSIS OF LIVER DISORDERS

Exploitation of novelties in the domain of scientific medicine, and undue enthusiasm for their reputed values, have been the causes of dissatisfaction with what the laboratory may contribute to the work of the physician. Disappointments are discouraging; and there are numerous instances in which too much has been expected of the laboratory even though unwarranted by any assurances of investigators. The clinicians rush to secure the benefits of any new discovery or a novel technic, frequently proclaimed before it has been thoroughly tested. The final values rarely measure up to the promises of success. In the end, science rather than the investigator is accused of a failure that may be magnified into a charge of impotence in general.

Referring to the modern procedures for testing the normality of the activity of certain organs, a recent writer[1] asserts that many of the so-called functional tests suggested and devised for examining the capacity of organs are as empiric in fact as any one of the numerous drugs that fill the Pharmacopeia. This condition is due to some extent to the physiologist's failure to realize the rapid progress of clinical medicine, and the awakened desire of the clinician to enlarge the field of diagnostic medicine beyond its present scope. There is also the wish to diagnose disease before the development of the signs considered at present essential to diagnosis, and thus to enhance the possibility either of preventing the disease or of treating it in its incipience. It is due, moreover, he adds, to the clinician's failure to realize that true growth can be based only on facts, and that an imaginary conception supported by inaccurate data can only retard the advance of scientific medicine.

From this standpoint the studies on the liver by Mann and his associates at the Mayo Foundation are of particular value. These afford a dependable basis for the critical evaluation of tests for hepatic function.[2] It has been assumed that since the liver has many important functions it would be easy to elaborate a method of measuring the capacity of the liver when normal and when diseased in at least one of these functions. This has not been possible up to the present time. In explanation, Mann and Bollman[1] have pointed to two prominent features: First, although the liver is of major importance in many phases of physiologic activity, its activity is only a part of these processes, other organs or tissues being necessarily involved; second, in many of these processes the liver stubbornly maintains its activity, and hepatic insufficiency and death are concomitant. For example, the bilirubinemia that follows removal of the greater portion of the liver is only transitory, and the remaining portion of the liver is soon able to excrete all the bile pigment formed in the animal. Partial removal of the liver has little demonstrable effect on the rate of disappearance of dyes injected into the blood unless the amount of pigment injected is excessive, although complete retention of the dye is easily demonstrated in the completely dehepatized animal. The carbohydrate metabolism of animals with greatly reduced amounts of hepatic tissue, so far as tests of hepatic function are an indication, is also maintained at an approximately normal level, and only slight differences from normal may be found in the amount of sugar in the blood. The use of glucose or levulose tolerance tests also fails to bring out any marked deviation of these animals from normal. The changes in the formation of urea, accumulation of amino-acid and excretion of ammonia, which are specific in the dehepatized animal, are difficult to demonstrate in the animal with greatly reduced hepatic tissue. The decrease in the destruction of uric acid, however, may be demonstrated in animals with reduced hepatic tissue. Physiologic reactions following the administration of certain toxic substances may indicate that the reduction in the amount of hepatic tissue diminishes the animal's tolerance to these substances, but the chemical tests employed do not show any extensive decrease in the rate of conjugation of these substances. These are other ways of stating that there is an enormous factor of safety in the amount of hepatic tissue normally available.

The foregoing comments are based on animal experiments in which there was an actual reduction in the amount of liver tissue. They may not be strictly comparable with hepatic disorder in man. There may be qualitative as well as quantitative differences. Obviously, any "test" of decreased function that registers clearly only marked injury is of comparatively small diagnostic value. Mann and Bollman remark that some of these tests which could not be proved experimentally to have any value in a known and controlled condition of hepatic deficiency may be of value clinically, either because they are an index of disease, not necessarily wholly hepatic, or because spontaneous disease of the liver may affect the function differently from experimental procedures. The Rochester investigations under controlled conditions led Mann and Bollman to assign limited values to the estimation of the function of the liver as follows: The van den Bergh tests for bilirubin in the blood

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[1] Mann, F. C., and Bollman, J. L.: Liver Function Tests, Arch. Path. & Lab. Med. 1:681 (May) 1926.

[2] A recent review of these is given by Greene, C. H.; Snell, A. M., and Walters, Waltman: Diseases of the Liver, I, Survey of Tests for Hepatic Function, Arch. Int. Med. 36: 248 (Aug.) 1925.

should be helpful as a measure of a condition in which the liver is either directly or indirectly, but not necessarily predominantly, affected. The physiologic basis for the use of the dyes that have been employed as tests of hepatic function is the fact that they appear to be excreted mainly by the liver. Experimentally, the hepatic function could not be sufficiently diminished to show a definite relation of hepatic insufficiency to retention of dye. Since, however, there is a definite retention of the dye in certain cases in man, this would appear to Mann and Bollman to be one of those tests whose value can be determined only by its careful and controlled use clinically, as has been done by Rowntree and his associates. There is a definite experimental basis for the elaboration of a test of glycogen mobilization which might bear the same relation to the activity of the liver in relation to carbohydrate metabolism as the quantitative bilirubin test does to pigment metabolism. Such conclusions still leave a hard road for the prospective diagnostician of liver disorders to travel.

PROTOZOA AND MAN

In the science of protozoology a new era has been ushered in through the awakening of medical interest in the lowest forms of animal parasites. Surveys relating to the distribution of protozoa in man have been made in increasing numbers since the beginning of the World War. The results, some of which have been referred to in The Journal,[1] have been so surprising as to compel attention to their significance. For example, until recently the ameba of dysentery was thought to be almost exclusively a parasite of tropical and subtropical countries; but in recent years it has been shown to be widespread throughout temperate climates as well, having been found endemic in many parts of the United States as well as the British Isles and central Europe. Some writers believe that the amount of endemic infection in temperate parts of both Europe and America has been greatly increased since the European war. This applies to admittedly harmful species of intestinal parasites. There is a growing conviction that it is not always easy to distinguish between the harmful and the harmless with respect to the protozoa. Attendant circumstances, such as gastro-intestinal lesions, may sometimes render otherwise innocuous living forms objectionable in the alimentary canal for mechanical or other reasons. Furthermore, the number of expert diagnosticians in clinical protozoology is at present still somewhat limited.

Recently Smithies[2] of the University of Illinois School of Medicine made the significant report that, in a series of nearly four thousand patients who presented themselves for the elucidation and relief of digestive disorders, one or more species of intestinal protozoa occurred in 7 per cent. Several species of protozoa may occur simultaneously in vegetative or encysted form in one host. The finding of one species, particularly of a so-called harmless flagellate, does not justify the assumption that the digestive anomaly present is due to that organism; "hidden" foci of "pathogenic" protozoa may be agents contributing to the disorder or its maintenance. These organisms may be observed only after painstaking and persistent search. The gallbladder, the vermiform appendix, colon haustra, diverticula or old, ragged or partly scarred ulcers serve as "foci of infestation" for such protozoa as *Endameba, Lamblia* or *Balantidium.*

It is too early to attempt any far-reaching deductions regarding the possible pathogenic significance of these observations. The most important feature, for the moment, is the indication of a need for more intensive study. Indeed, the latest discussion contends that far too much concern has been shown with regard to chemical tests in stools, and not sufficient attention has been given to the examination of thin stool-films, microscopically; and it is asserted that gastro-enterologic clinics, places where one would expect special efforts to be put forth, are even more negligent in stool microscopy than are clinics devoted to general medicine. Investigation of protozoa has until lately remained largely in the hands of nonmedical biologists.

The problem of the sources and perpetuation of protozoa in man also obtrudes itself to our notice. Outside the body, even in the temperate zone, food and water contamination by farm animals, flies, insects and man would seem to be an important means of spreading protozoal infestation. Particularly potent as disseminating sources are "truck farms" and hothouses where fruits and vegetables are "forced" by manuring with the contaminated excreta of fowls and barnyard animals. Hence Smithies contends that food and water fouling by protozoa furnishes a public health problem, not as yet recognized by the health boards of states and countries not tropically situated. With respect to the interior of the body, he argues further, if filthy loci are furnished by carious teeth, soggy gums, ulcerated, pus-laden tonsils, ulcers, gummas or neoplasms of the mouth, stomach or bowel, practically all species of protozoa may lodge, thrive and exert pernicious effects. Normal gastric secretion and free flow of bile and pancreatic juice may destroy or inhibit the growth of active organisms, but such agents have little, if any, effect on encysted forms. In Smithies' judgment, probably the most powerful factor concerned with the relative infrequency of protozoa in the esophagus, stomach and small bowel is free and vigorous peristaltic movements, which act against any tendency to stasis of contents in these sections of the alimentary tract. If, by ulcer or cancer, stagnation does occur in the digestive tract proximal to the cecum, protozoal incidence becomes much greater. The indolent peristaltic movements, the pool-like haustra, the constant alkalinity, the protective mucus and the large caliber of the colon furnish ideal environments where protozoa, introduced with raw food, may lodge, multiply and probably initiate functional and pathologic anomalies.

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[1] Intestinal Protozoa in the Tropics, editorial, J. A. M. A. **72**: 417 (Feb. 8) 1919; A Plea for Medical Protozoology, ibid. **77**: 205 (July 16) 1921; Infestation with Flagellate Protozoa, ibid. **82**: 1864 (June 7) 1924.

[2] Smithies, Frank: Protozoiasis Occurring in Temperate Zone Residents, Am. J. Trop. Med. **6**: 1 (Jan.) 1926.

Current Comment

ACETANILID

Investigations on the dangers of poisoning with aniline, to which reference was recently made in THE JOURNAL,[1] have served to correct certain current impressions regarding the toxicology of this substance, which occasionally is an industrial menace. Aniline has a direct toxic effect on the heart muscle, including the specialized conductive tissue; and in certain dosages it produces various types of arrhythmia and heart block. Contrary to the customary statements, methemoglobin does not seem to be formed during aniline poisoning. Death from acute intoxication is usually cardiac, not respiratory, in origin. This widely used drug is a derivative of aniline, mono-acetyl aniline, resulting from the introduction of an acetyl radical into the molecule. Young and Wilson,[2] working at the Universities of Michigan and Wisconsin, respectively, point out that the use of acetanilid, acetphenetidin and other aniline derivatives may bring about symptoms similar to those of aniline poisoning. For acetanilid they have already shown that, like the mother substance aniline, it also fails to produce methemoglobin despite the allegations of a positive sort in the medical literature. The action of acetanilid on the heart, blood and circulation is essentially the same as that of aniline. Both form para-aminophenol in the body, and this may account in part for the cyanosis sometimes observed. Prolonged administration of sublethal doses of acetanilid also produces anemia and emaciation. Thus the widely used drug cannot conceal its intimate relationship to aniline. Indeed, the hypothesis has been ventured that acetanilid is hydrolyzed within the organism to form aniline and acetic acid or some derivative.

THE SURVIVAL OF INTESTINAL BACTERIA

The mention of typhoid fever, Asiatic cholera, hookworm disease and amebic dysentery suffices as a reminder of the menaces that the dejecta from the alimentary tract of man may harbor. According to Jordan[3] of the University of Chicago, a single gram (15 grains) of fresh feces will contain an average of approximately 75,000,000 bacteria cultivable by the usual standard methods. The number is increased within a few days to many times, sometimes to several hundred times, the original count. This initial multiplication is due as a rule mainly if not wholly to an increase in the numbers of *B. coli;* and it occurs regardless of temperature changes outside the body. It would require little mathematical skill to demonstrate, on this basis, a propagation of alimentary bacteria which, like some of the stimulated vegetation described in H. G. Wells' Food of the Gods, would presently overwhelm us. Fortunately, nature provides inhibitions to some of her most productive processes; indeed, mankind and the physician in particular have come to depend on natural protective devices to afford us some security against a world of threatening dangers. In the case of the dejecta it has also been demonstrated that the initial multiplication of the fecal bacteria outside the body is followed by a slow but unfailing decrease. This is true even for such infectious agents as the typhoid bacteria in feces. Hence it seems improbable to experienced bacteriologists that long-unused privy vaults or earth pits remain permanently infectious. Even the alimentary tract itself becomes the graveyard for myriads of bacteria that never escape its confines alive. Immunity is not the only force that fights in our behalf. The bacteria have their own struggles for survival in a world that is not always tolerant even to these lowly forms of life.

THE VITAMINS IN HUMAN MILK

Among the advantageous components that place milk in the front rank of nutrient products, the vitamins are usually emphasized. True, these food factors are contained in milk; but the early impressions of its extreme richness in the vitamins have not remained without some disappointments. This is due in part to early reports, notably by Hopkins of England for cow's milk, that have not been substantiated by American investigators. Hence a recent writer[1] has remarked that great uncertainty exists as to the vitamin B content of milk, and considerable variation is known to exist in the content of vitamins A and C. Many articles of food exceed milk with respect to the content of one or another of the vitamins, though few individual edible products exhibit an equal variety of them. A partial explanation, at least, of the confusion about cow's milk lies in the character of the diet of the lactating animal; for to a certain extent her vitamins depend on the supplies of vitamin furnished with her rations. Typical winter farm milk, produced during the season of indoor life for the cow on dried fodders, is likely to be much poorer in vitamins. Change to green pasturage is advantageous. Until recently, the quality of human milk from the vitamin standpoint has scarcely been examined. The few available studies[2] have not served to arouse especial enthusiasm for the human product despite the expectation that it might evince values that would help to explain its vaunted superiority as an infant food. The latest and most elaborate investigations from the Merrill-Palmer

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[1] Shoe Dyes and Aniline Poisoning, Current Comment, J. A. M. A. 86:34 (July 3) 1926.

[2] Young, A. G., and Wilson, J. A.: Toxicological Studies of Aniline and Aniline Compounds, III, Toxicological and Hematological Studies of Acetanilid Poisoning, J. Pharmacol. & Exper. Therap. 27:133 (March) 1926.

[3] Jordan, E. O.: The Changes in the Bacterial Content of Stored Normal and Typhoid Feces, J. Infect. Dis. 38:306 (April) 1926.

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[1] McCollum, E. V., and Simmonds, Nina: The Newer Knowledge of Nutrition, New York, the Macmillan Company, 1925.

[2] Gibson, R. B.: Philippine J. Sc., Sect. B 8:475, 1913. Osborne, T. B., and Mendel, L. B.: Carnegie Institution of Washington, Year Book 19, 1920, p. 389; Biochem. J. 17:363, 1922. Kennedy, C.; Palmer, L. S., and Schultz, F. W.: Tr. Am. Pediat. Soc. 35:26, 1923.

School in Detroit[3] place human milk in a class with cow's milk; the mixed product from wetnurses, at any rate, is not richer in vitamins than is the average market milk. Whether improvement can be instituted through appropriate feeding of the lactating women, and whether this is a real advantage to the infants, remains to be learned. This is not the first time that physicians have been made to realize that even breast milk ordinarily carries no exceptional factors of safety against certain deficiency disorders.

Association News

THE WASHINGTON (D. C.) SESSION

Time and Place of the Seventy-Eighth Annual Session

The Board of Trustees of the American Medical Association has unanimously decided on May 16-20, 1927, as the date for the Seventy-Eighth Annual Session of the Association, to be held in Washington, D. C.

Chairman of Local Committee of Arrangements

Dr. William Gerry Morgan will serve as Chairman of the Local Committee of Arrangements for the Washington Session.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CONNECTICUT

Personal.—Dr. Edward J. Godfrey, Jr., has been appointed city health officer of Waterbury.——Dr. Willard Soper, Saranac Lake, has been appointed municipal director of tuberculosis of New Haven.

Typhoid from Clams.—The state department of health reports a recent outbreak of eight cases of typhoid fever in one family following the gift by a neighbor of some raw clams which had been dug up near the mouth of a large sewer. The clams are of the so-called bootleg variety, dug up by irresponsible persons, and were not from a certified area in the shellfish waters.

Dedication of Memorial.—At the dedication of a memorial to Dr. William Beaumont at Lebanon, June 29, Russell H. Chittenden, Ph.D., emeritus professor of physiologic chemistry, Yale University School of Medicine, gave the address, and Lafayette B. Mendel, Ph.D., Sterling professor of physiologic chemistry, Yale University School of Medicine, presided; Dr. Leonard W. Bacon presented the memorial and Karl F. Bishop, Esq., first selectman, accepted the memorial in behalf of the town. Dr. John E. Lane, New Haven, represented the American Medical Association at the exercises. The memorial is a tablet set on a boulder taken from the Beaumont farm.

Pasciuta Refused License.—Judge Ells of the New Haven superior court filed a memorandum, June 10, in which he refused to issue a mandamus requiring the secretary of the state board of health to recognize the report of the eclectic board of examiners and issue Amedo Pasciuta of Meriden a license to practice medicine in Connecticut. The judge said in part, it is reported, that Pasciuta made a sorry show of his fitness in his testimony, and that his medical education is a sham. The judge said in his decision that three of the members of the board that had examined Pasciuta and passed him as fit to practice medicine had their own licenses to practice medicine revoked because of fraud. Pasciuta's application for a mandamus was denied.

DISTRICT OF COLUMBIA

Dr. Wiley Honored.—Dr. Harvey W. Wiley, for many years chief chemist of the U. S. Department of Agriculture, was tendered a testimonial luncheon, June 30, by the New York Consumers and Producers' Association in New York to celebrate the twentieth anniversary of the first national pure food law. Dr. Wiley had a prominent part in forwarding this legislation, which was enacted by Congress, June 30, 1906.

Examination of Preschool Children.—The parent teacher associations in Washington having inaugurated a movement for the physical examination of all children before entering school, the district health department has offered the services of the child hygiene centers for these examinations. The health department has announced that in the examination of 2,614 pupils of the first grade and kindergartens in the district, 91.5 per cent of them were found to have physical defects.

FLORIDA

Society News.—The Florida State Medical Golfers' Association was organized at the Gainesville meeting of the state society with Dr. Joseph Halton, Sarasota, president; Dr. William S. Manning, Jacksonville, secretary, and Dr. Joseph W. Taylor, Tampa, treasurer. There will be a three day tournament at the next annual meeting, and all members are requested to bring their golf clubs. The membership fee is one dollar.——Dr. Samuel R. Norris, Jacksonville, addressed the Volusia County Medical Society, Daytona Beach, recently, on "The Conduct of Labor."

Lakeland's New Hospital.—Largely as the result of the initiative of physicians of Polk County, Lakeland voted almost unanimously to provide a hospital not only for that community but for the surrounding southwest section of Florida. It required about three years to educate the people of this community to the need of a hospital. Lakeland has just completed, the *Journal of the Florida Medical Association* says, the most modern type of hospital building, and there is a very friendly attitude toward the Polk County Medical Society. The people feel that the Morrell Memorial Hospital, Lakeland, has provided them an avenue of service. Before the opening, recently, the city of Lakeland entertained at luncheon the members of the Polk County Medical Society, the Cleveland Heights Club and the local press association; there were present physicians from Tampa, Ocala, Jacksonville, Orlando, Plant City, Fort Myers and all parts of Polk County. The hospital is of Spanish and Italian design with reenforced concrete frame, hollow tile walls, stucco finish, four stories high, fireproof, with driveways, covered porches, sun parlors and roof garden, and the various departments have modern equipment. The entire hospital plant represents an investment of about $500,000.

ILLINOIS

Kopczynski Assumes Diseased Physician's Name.—C. W. Kopczynski, formerly of Chicago and Youngstown, Ohio, was sentenced, July 1, at Belleville to serve from one to ten years in the penitentiary, it is reported, following his plea of guilty to a charge of abducting a 16 year old girl. Kopczynski came to Caseyville several months ago in answer to an advertisement for a physician, following the death of the only physician which that town had. He is said to have assumed the name of "Dr. David Provan," a reputable physician of Chicago, who died in July, 1924, and engaged in the practice of medicine. Kopczynski was arrested in June and indicted under charges of violating the medical practice act, abduction and rape. It is also reported that Kopczynski formerly practiced medicine in South Omaha under the name of "Dr. Provan Kopczynski," and that Dr. David M. Provan's license disappeared after he died.

Chicago

Hospital News.—The Illinois Central Hospital is to build an additional wing of fifty beds, which will make the total capacity of the hospital 250, and provide additional space for laboratories; the main building was opened in 1916, and a wing was constructed in 1922.——Dr. Stephen R. Pietrowicz has been elected chief of staff of St. Mary of Nazareth Hospital, succeeding the late Dr. Albert J. Ochsner; Dr. George Mueller has been elected surgeon-in-chief.

Annual Golf Tournament.—The twenty-fifth annual tournament of the Physicians' Golf Association of Chicago will be held at the Evanston Golf Club, July 16. Members who are not indebted to the association are eligible to compete for the prizes, and handicaps will be assigned by the officers acting as a committee of the whole. The Dickerman cup, emblematic of the championship, will go to the player making low score for 36 holes; other trophies to be awarded are the Henrotin cup, the Billings cup, the Lynch cup and the Association cup. The charge for green fees, luncheon and dinner is $10. Notice should be sent promptly to the secretary, Dr. Laurence H. Mayers, 307 North Michigan Avenue; Dr. Oliver S. Ormsby is the president.

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[3] Macy, I. G.; Outhouse, J.; Long, M. L., and Hoobler, B. R.: A Study of the Vitamin A and *B Content of Mixed Human Milk*, J. Biol. Chem. **67**: li (Feb) 1926.

Chicago's Low Mortality Rate.—Among the cities of the world with a population exceeding one million, Chicago had in 1925, as it did in 1924, the lowest death rate, 11.5 per thousand of population. According to the Chicago Department of Health, the death rate in other great cities in order are: Berlin, 11.7; New York, 12.2; Vienna, 12.9; Philadelphia, 13.2; Buenos Aires, 13.7; Paris, 14.7; Bombay, 25.4; Calcutta, 32.7; the figures for London and Osaka were not obtainable. Perhaps the greatest single factor in keeping Chicago in the lead, the health commissioner says, is the reduction in infant mortality, which, in 1925, was 74.7 infant deaths per thousand births, the lowest Chicago ever had. The death rate from diphtheria, measles, scarlet fever and whooping cough was lower in 1925, and although the city was "literally surrounded by smallpox," there were only a few cases in Chicago.

INDIANA

Physician Sentenced.—Dr. Julius C. Blume, Elwood, recently pleaded guilty to violation of the narcotic act, it is reported, and was sentenced to one year and a day in the state penitentiary at Leavenworth, Kan.

Society News.—Dr. George W. Crile, Cleveland, addressed the Terre Haute Academy of Medicine, recently, on "Function of Liver in Its Relation to Management of Operation on Gallbladder."——Dr. Arlie R. Barnes of the Mayo Clinic, Rochester, Minn., held a clinic on "By-Products of Hyperthyroidism" at the annual meeting of the Eleventh District Medical Society, Wabash, May 20.——Dr. Willis D. Gatch, Indianapolis, addressed the annual meeting of the Randolph County Medical Society, Winchester, June 16, on "Experimental and Clinical Observation on Intestinal Obstruction."

Personal.—Dr. Charles P. Emerson, dean and professor of medicine, Indiana University School of Medicine, Indianapolis, addressed the National Conference of Social Workers at Cleveland, May 27, on "The Hospital as a Social Center."——Dr. Horace R. Allen, Indianapolis, addressed the Muncie Academy of Medicine, May 28, on "Bone Surgery"; Dr. Stuart Graves, dean and professor of pathology and bacteriology, University of Louisville School of Medicine, addressed the academy recently on "Incidence, Character, Distribution and Etiology of Forty-Five Aneurysms Encountered in 1,595 Necropsies."——Dr. Earle S. Green has been elected chief of staff of the Home Hospital, Muncie, to succeed Dr. Byrl R. Kirklin, who has accepted a position at the Mayo Clinic, Rochester, Minn.——Dr. James B. Maple, Sullivan, has been appointed a member of the school board.——Dr. John B. Maxwell, formerly of Lucerne, has been appointed on the staff of the Northern Hospital for the Insane at Logansport.——Dr. Merrill F. Steele, Fort Wayne, was elected president of the Indiana Hospital Association, June 5.——Honorary degrees were conferred at the eighty-eighth annual commencement of Wabash College, June 12, on Dr. Joseph R. Eastman and Dr. Thomas B. Noble, both of Indianapolis.——Dr. Harry O. Jones has been elected a member of the school board at Berne.

KANSAS

Medical Defense Board.—At the last annual meeting of the Kansas Medical Society, the medical defense board reported that the annual expenditures of the board for the last twelve years averaged $1,291.62; the greatest expenditure for any one year having been about $2,000 in 1926. The attorney for the board reported that eight actions had been filed since the last report, and that there were then pending twenty-four in some form or other, as compared with twenty actions pending a year ago. He said that the society had not lost any of the six cases disposed of since the last report. Of the cases that came to trial during the past year, two were dismissed by the plaintiff because of inability to make a proper showing; two were taken from the jury by the court and judgment entered for the defendant, and one case resulted in a verdict by the jury for the defendant.

KENTUCKY

Personal.—Dr. Edward Speidel was elected president of the Medical Alumni of the University of Louisville, which was organized at a meeting in that city, June 15.——Dr. Loranza F. Jones has been appointed health officer of Richmond.

University News.—A chapter of the international honorary scholarship society, Alpha Omega Alpha, has been established at the University of Louisville School of Medicine, following a petition by five members of the faculty and seven undergraduates; there are now thirty-five chapters of this society in the United States and Canada, including those recently established also at the University of Wisconsin, University of Colorado and the University of Georgia.

Deaths from Infantile Paralysis.—A preliminary report of deaths of 1925 by the director, bureau of vital statistics, state board of health, shows, it is reported, that fifty deaths were due to infantile paralysis in the state last year, and that the disease was not confined to any one part of the state. There were 225 deaths due to automobile accidents, an increase from 137 for the previous year. The total number of deaths in the state in 1925 was given as 28,448, a rate of 11.4 per thousand of population. There were 62,138 births, a rate of 25.2 per thousand. The infant mortality rate was 73.4 per thousand.

MASSACHUSETTS

Personal.—Mayor Nichols of Boston has reappointed Dr. Francis X. Mahoney as city health commissioner.——Dr. Josiah P. Bixby was honored by the physicians of Woburn, June 2, at a meeting at the Country Club to celebrate his fiftieth year of honorable service in the practice of medicine; Dr. Bixby not only gave honorable service in his profession, but has also been active in the civic and religious activities of this community.

Report of Massachusetts General Hospital.—This hospital is gradually introducing men who give part or whole time to research, and offices are given to some of them at the hospital where they may see private patients, according to the *Boston Medical and Surgical Journal.* The Bulfinch building has been entirely remodeled, so that it has a capacity of 240 beds instead of 191, and offices for some full-time members of the staff, and laboratories for research and routine work. During the last year, Dr. James Homer Wright, for many years pathologist, resigned and is now consulting pathologist, and Dr. Oscar Richardson, assistant pathologist, resigned after twenty years of service; Dr. Tracy B. Mallory has been appointed chief of the department of pathology. In his annual report for 1925, the director of the hospital states that 58,243 of the 118,783 patients' days were free. In spite of this the proportion of patients paying board full time has increased from 13 per cent in 1891 to 64 per cent in 1925, while the percentage of free patients has decreased from 80 per cent in 1891 to less than 14 per cent in 1925.

MICHIGAN

Virulent Diphtheria.—The type of diphtheria prevalent in Detroit at present is unusually severe, forty-eight deaths having occurred among 289 patients in June up through the twenty-sixth, giving a fatality rate of 16.6. In the first five months of this year there had been 898 cases reported with 134 deaths, giving a case fatality rate of 14.9, while in the first five months of last year there were 752 cases with thirty-five deaths, and the case fatality rate was only 5.4. The average age of the children dying of diphtheria in Detroit in the last two months was 6 years, and none of them had had toxin-antitoxin.

Society News.—Dr. George C. Mosher, Kansas City, Mo., addressed the Detroit Obstetrical and Gynecological Society, recently, on "Indications for Cesarean Section."——At the last meeting of the Detroit Oto-Laryngological Society, Dr. Clifton F. McClintic, professor of anatomy, histology and embryology at the Detroit College of Medicine, gave a demonstration of the anatomy of the nervous system; the society meets at the Wayne County Medical Society's building, 64 High Street, the third Wednesday of each month. The officers for the ensuing year are Dr. Frank L. Ryerson, president; Dr. Emil Amberg, vice president, and Dr. William Fowler, secretary-treasurer.——The thirty-seventh annual clinic of the Alumni Association of the Detroit College of Medicine and Surgery was held in Detroit, June 14-19.——The Tuberculosis Society of Detroit and Wayne County has created five scholarships of $150 each, to be awarded annually to those teachers who show the most effective results in school health work.

NEW YORK

Hospital News.—St. Johns Hospital, Brooklyn, has let the contract for a $1,600,000 hospital building.——Mount Mercy Hospital, Buffalo, has let the contract for a new $500,000 hospital building.

Warning: Liquor Prescriptions Stolen.—Several physicians of Binghamton had their liquor prescription blank books stolen, recently, coincident with a visit by a "pseudorepresentative" of a distillery in Pittsburgh. The culprit managed by various ruses to be alone in the physicians' offices for a short time during his visit, and in this manner was able to accumulate a considerable number of liquor prescriptions. He is described as of dark complexion, smooth face, about 30 years old, and as wearing a blue suit and carrying a brief case.

Course in Orthopedic Nursing.—The New York Orthopedic Dispensary and Hospital, 420 East Fifty-Ninth Street, New York, will offer a three months postgraduate course in orthopedic nursing, beginning October 1. There will be lectures by professors from Columbia University, demonstrations and practical work in the operating rooms and wards, and visits to the branch of the hospital at White Plains to observe patients during convalescence. Certificates will be given nurses who complete the course satisfactorily, and students will receive $30 a month with full maintenance.

Committee on Grievances.—In accordance with the new Webb-Loomis Medical Practice Act, the board of regents of the state education department has appointed a committee on grievances to consider charges against duly licensed practitioners for alleged violation of the law. If the committee sustains the charges brought before it, the board of regents, to which the committee reports, may revoke or suspend licenses, or otherwise discipline those whom the board found guilty. The members of the committee on grievances nominated by the state medical society include Drs. Orrin S. Wightman, New York; Moses Keschner, New York; Frederick H. Flaherty, Syracuse, and Allen A. Jones, Buffalo; other physicians on the committee are Roy Upham, Brooklyn; Arthur B. Van Loon, Albany; Grant C. Madill, Ogdensburg; Martin B. Tinker, Ithaca, and William S. Overton, Binghamton. The state osteopathic society has one representative on the committee.

New York City

Milk Grafter Sentenced.—Thomas J. Clougher, formerly secretary to Health Commissioner Dr. Frank A. Monaghan, was convicted of giving and taking bribes in connection with the milk supply of the city, it is reported, and was sentenced to from five to ten years at hard labor in Sing Sing prison. Clougher was taken to Sing Sing, June 30.

Health of Negroes.—A study by the department of health of last year's deaths in the city reveals a higher death rate for negroes than for white persons for pulmonary tuberculosis, pneumonia, heart disease, nephritis and violence. The respective rates per hundred thousand of population were 357 and 67 for pulmonary tuberculosis, 390 and 127 for pneumonia, 331 and 237 for heart disease, 82 and 62 for nephritis, and 160 and 95 for violence, including suicides; the respective rates for all causes were 2,291 and 1,113 per hundred thousand of population.

Personal.—Friends of Dr. Emanuel Libman gave a dinner in his honor, June 18, to celebrate his return to health; Dr. Israel Strauss was toastmaster.——Dr. Nellis B. Foster received the honorary degree of Sc.D. from Amherst College, June 21.——Dr. Clarence G. Bandler has been appointed professor of urology at the New York Post-Graduate Medical School and Hospital.——Dr. Alphonse R. Dochez received the honorary degree of doctor of science from Yale University, June 23.——Drs. Thomas A. Gonzales and Manuel E. Marten have been appointed deputy chief medical examiners. Both of these physicians for years have been assistants to the medical examiners in the Manhattan and Brooklyn offices.

Society News.—The first meeting of the New York Academy of Medicine in its new building will be the stated meeting, October 21; Professor Magnus of the University of Utrecht, Holland, addressed a special meeting of the section of otology of the academy, June 24, on "Cooperation or Interference of Reflexes from Other Sense Organs with Those Evoked from the Labyrinths."——Dr. Frank E. Elliott has been elected president of the Bay Ridge Medical Society, and Dr. Herman Reque, secretary.——It was announced at a luncheon, June 18, at the Bankers' Club that the campaign of the American Society for the Control of Cancer for a $1,000,000 endowment fund had reached about $340,000, and that an intensive campaign will be conducted in the fall.

New Medical Films.—The Metropolitan Life Insurance Company has produced a film, "New Ways for Old," which is a story of the change in the methods of handling a case of diphtheria in an American family since the Civil War; the Metropolitan Insurance Company, Madison Avenue, New York, is prepared to send the film to health officers and public health associations, free of charge, except for transportation.——The Travelers' Insurance Company has prepared a one-reel film entitled "Paying the Price," which is available for loan in the state of New York, and is the story of a mechanic who injured his hand slightly and treated the injury himself. The picture has no gruesome details; applications for its use may be made to the Supervisor of Exhibits, State Department of Health, 4 Clinton Avenue, Albany, N. Y.

NORTH DAKOTA

Hospital News.—The citizens of Langdon voted at the June primaries on the question of erecting a memorial hospital.——St. Joseph's Hospital, Dickinson, dedicated a new wing in April.

Personal.—Dr. Gustavus J. McIntosh, Devils Lake, has been reappointed superintendent of the county board of health.——Dr. William Thelen, Wilton, has been elected president of the North Dakota Health Officers' Association; Dr. Edward C. Haagensen, Grand Forks, vice president, and Dr. Arthur A. Whittemore, Bismarck, secretary-treasurer.——Dr. Walter B. Scott, Ray, has been appointed superintendent of the board of health of Williams County, to succeed the late Dr. Henry C. Windel, Williston.

OHIO

Personal.—Dr. George T. Harding, father of the late President Harding, was elected departmental medical director of the Ohio G. A. R. at the annual encampment, June 16.——Dr. Ralph W. Good, Cincinnati, who has been nominated for a three years fellowship in general surgery at the Mayo Foundation, Rochester, Minn., took up his new duties July 1.——Dr. Nancy E. Finney, Cedarville, has been appointed resident physician at Western College for Women at Oxford, and will take up that work, September 1.

OKLAHOMA

State Medical Election.—At the annual meeting of the Oklahoma State Medical Association, Oklahoma City, June 22-24, Dr. Arthur S. Risser, Blackwell, was elected president; Dr. Joseph S. Fulton, Otoka, president-elect; Drs. Ross D. Long, Oklahoma City, Fred S. Clinton, Tulsa, and Walter A. Howard, Chelsea, vice presidents, and Dr. Claude A. Thompson, Muskogee, secretary-treasurer (reelected). The next annual meeting will be at Muskogee in May, 1927.

PENNSYLVANIA

Typhoid Outbreaks.—The state board of health notes that in the outbreak of typhoid at New Milford, recently, there were only four deaths among about seventy-four cases. More recently, there was an outbreak of fifteen cases of typhoid at Glenshaw in Allegheny County; both outbreaks were water-borne.

County Society Clinic.—The annual clinic of the Blair County Medical Society was conducted, June 26, at the Mercy Hospital, Altoona, whose staff was host at a luncheon at the Blairmont Club for the visiting physicians. There were clinics in the morning on bladder surgery and on thyroid surgery, and in the afternoon clinics on general medicine, dental surgery, and other specialties, also exhibits of pathologic specimens and roentgen-ray plates.

Hospitals May Exclude Osteopaths.—Hospitals under the control of the state of Pennsylvania have the right to determine the sort of treatment to be administered in them and who may prescribe and administer remedies, according to the opinion of Deputy Attorney General Anderson. The opinion was made in answer to a complaint of J. T. Fuller, an osteopath of Corry, who complained that he had been refused permission to give osteopathic treatment to certain patients.

Research on Sleep.—The Mellon Institute of Industrial Research announces that from now on there will be two separate Simmons fellowships at the institute; one of them will continue research on the physiologic and psychologic factors of sleep under the supervision of Harry M. Johnson, Ph.D., and the other, held by Thomas H. Swan, Ph.D., will be concerned chiefly with the subject of bedding materials. The Simmons fellowship was founded at Mellon Institute in 1924 to carry on a broad study of problems in the promotion and maintenance of healthful sleep. The investigation is being supported primarily for the benefit of the public, and the results will be published.

Philadelphia

Hospital for Sale.—The board of city trusts placed the Wills Eye Hospital, Logan Circle and Parkway, on sale, June 23; if the site will bring what is said to be a reasonable estimate ($1,500,000), a new hospital will be erected on some other site.

Hospitals Merged.—The board of trustees of Mount Sinai Hospital announced at the annual meeting, June 8, the completion of the merger of Mount Sinai and the Jewish Maternity hospitals. The former hospital will continue to operate the maternity hospital as a branch until the new building is completed, and for which the funds are already available. The board of trustees and the medical staff of both institutions have merged; fifty of the 100 beds in the new building will be assigned to the obstetric department.

SOUTH DAKOTA

Crippled Children's Clinic.—A crippled children's clinic was held at DeSmet, May 11, by Dr. Emil S. Geist, Minneapolis, under the auspices of the state division of child hygiene, in conjunction with the meeting of the Kingsbury County Medical Society. About forty patients were present from twelve counties, as well as all of the physicians of Kingsbury County, and some from adjoining counties; there was a banquet in the evening. The Kingsbury County Medical Society is said to be the only county society in South Dakota whose membership comprises all the physicians in the county.

TENNESSEE

Vanderbilt Suspends Dental School.—It is reported that Vanderbilt University has suspended the dental department, the chief reason being the failure to secure funds for an endowment sufficient to maintain its standing comparable to the other schools of the university.

Health at Memphis.—Telegraphic reports to the U. S. Department of Commerce from sixty-six cities with a total population of 29,000,000, for the week ending June 12, indicate that the highest mortality rate (29.2) was for Memphis, and that the rate for the group of cities as a whole was 12.4. The mortality rate for Memphis in the corresponding week last year was 19.7, and for the group of cities, 15.3.

Personal.—Dr. Theodore W. Davis, Nashville, has been elected resident physician of the Nashville General Hospital, to succeed Dr. Bailey B. Sory, Jr., Springfield, resigned.——Dr. Edward W. Clark, Willow Grove, was elected president of the Upper Cumberland Medical Society at the recent annual meeting at Red Boiling Springs, and Dr. Zeb L. Shipley, Cookeville, who has been secretary for ten years, was reelected.

VIRGINIA

Hospital News.—The Hughes Memorial Hospital, Danville, was opened, June 10. The four-story building is named in honor of the late John E. Hughes, Danville, who left, in his will, $250,000 for the hospital; the former general hospital has been closed.

Appointments to State Board of Examiners.—The governor recently appointed the following, among others, to the Virginia State Board of Medical Examiners for a period of four years:

Dr. John H. Ayers, Accomac; Dr. Philip St. L. Moncure, Norfolk; Dr. Hack U. Stephenson, Richmond; Dr. Fletcher J. Wright, Petersburg; Dr. Isaac C. Harrison, Danville; Dr. John W. Preston, Roanoke; Dr. Philip W. Boyd, Winchester; Dr. Lewis Holladay, Orange; Dr. Francis H. Smith, Abingdon; Dr. Robert Glasgow, Lexington; Dr. Garnette W. Johnson, Danville.

Personal.—Dr. Waller Nelson Mercer, Richmond, lieutenant colonel, Medical Reserve Corps, U. S. Army, has been assigned as chief of the Medical Service, General Hospital no. 73 (Reserve), Baltimore.——Dr. Samuel E. Hughes, Danville, has been appointed medical director of Hilltop Sanatorium, Danville.——Dr. Thornton W. Hankins, Fordwick, has been elected president of the Bank of Craigsville.——Dr. John Shelton Horsley, Richmond, was elected president of the Virginia Academy of Science, May 8, and Dr. Edgar C. L. Miller, Richmond, secretary-treasurer.

Fund for Medical School Complete.—The campaign for $1,400,000 for new medical buildings at the University of Virginia has been successful, and work on the buildings will start as soon as the plans are completed. The state of Virginia contributed $250,000, private subscriptions amounted to $351,000, and the original grant of the general education board of the Rockefeller Foundation of $700,000 was increased by a more recent gift of a $100,000 addition. In general, the new buildings will conform to the old standards of the university as first planned by Thomas Jefferson. Dr. Robert B. Bean is chairman of the faculty committee on construction.

WASHINGTON

Sanipractor Fined.—According to the *Health Messenger*, Sam Rosenstrauch, sanipractor, Seattle, was fined $50, June 8, by Judge Dalton in connection with his use of the term "surgery" in an advertisement; he is said to have claimed to do electrotherapy and surgery.

Personal.—Dr. Warren B. Penney was elected president of the Pierce County Antituberculosis League, at Tacoma, May 11.——Dr. Oliver J. Moorhead has been appointed health officer of Walla Walla for the unexpired term of Dr. Joseph P. Kane, who recently went to Johns Hopkins University for postgraduate study.

Society News.—Dr. Frederick A. Willius, Mayo Clinic, Rochester, Minn., recently addressed the King County Medical Society, Seattle, on "Newer Methods in the Treatment of Heart Disease."——The Whitman County Medical Society voted to refuse to recognize in his official capacity the osteopath who was recently appointed city health officer of Colfax; the state director of health has ordered Dr. Robert J. Skaife to take charge of health work in Colfax.——Dr. Adolph Weinzirl has been appointed assistant commissioner of health of Seattle.——Dr. James E. Crichton, Seattle, has retired as president of the King County Antituberculosis League after nine years of service.——Dr. Hibbert W. Hill, commissioner of health, Vancouver, B. C., addressed the King County Medical Society, recently, on "Nonrelation of Nutrition to the Incidence of Infectious Diseases."

WEST VIRGINIA

State Society Would Raise Professors' Pay.—The West Virginia State Medical Association at its annual meeting, Morgantown, May 25-27, adopted the following resolution and authorized the president or his representative to appear before the state board of education with reference to the subject:

> Whereas, The salaries of our West Virginia University School of Medcine professors are not at all commensurate to the service rendered to the state; and since they are less than those paid to the professors in the law school, and since they are less than that earned ordinarily by doctors during their first years of practice; therefore, be it
>
> *Resolved,* That we, the House of Delegates of the West Virginia State Medical Association, recommend to the state board of education that the salaries of the professors in the school of medicine who hold membership in the American Medical Association be raised to $6,000 for the year as a minimum.

WISCONSIN

Society News.—The Third Councilor District Medical Society held its first annual meeting at the Wisconsin General Hospital, Madison, June 30. The program was arranged by a committee representing each of the five county societies: among others, Dr. Raymond C. Blankinship, assistant professor of clinical medicine, University of Wisconsin, spoke on "Cholecystography"; Dr. Joseph Brennemann, Chicago, on "Treatment of Pyloric Stenosis and Allied Conditions"; Dr. Joseph F. Smith, Wausau, president, state medical society, on "Periodic Examinations of Apparently Healthy Persons," and Dr. Frederick J. Gaenslen, Milwaukee, on "Diagnosis and Treatment of Some of the Common Fractures."

GENERAL

Effect of College Athletics.—The President's Committee of Fifty on College Hygiene, and the Metropolitan Life Insurance Company have undertaken an investigation of the effect of college athletics on the life expectation of athletes; other participating organizations are the American Students' Health Association, the National Collegiate Athletic Association and the Society of Directors of Physical Education in Colleges. They will study the life histories of more than 8,000 college athletes who were members of the class of 1905 and previous years. The study will necessarily be restricted to those schools which as early as 1905, had well organized athletic departments, and thus far the following schools are participating in the study: Yale, Princeton, Cornell, University of California, University of Michigan, University of Chicago, University of Pennsylvania and Amherst.

American Therapeutic Society.—The twenty-seventh annual meeting of the American Therapeutic Society was held in Philadelphia, June 10-12, under the presidency of Dr. Lewis H. Taylor, Washington, D. C., who addressed the opening scientific session on "Personal Observations on the Management of Surgical Cases"; among the other speakers were Dr. William Wayne Babcock, Philadelphia, "Application of Hydrokinetics in the Treatment of Aneurysm"; Dr. William A. Campbell, Colorado Springs, Colo., "Pulmonary Hemorrhage and High Altitude"; Dr. Noah Philip Norman, New York, "Summary of Present Knowledge of Vitamins and Their Therapeutic Importance"; Dr. Arthur C. Morgan, Philadelphia, "Therapeutics of Headache," and Dr. Hyman I. Goldstein, Camden, N. J., "Newer Therapy in Cardiovascular Renal Disease." Dr. William A. Campbell, Colorado Springs, Colo., was elected president; Drs. William Robinson, Philadelphia, Cole Edward Cooper, Toronto, Canada, and Fitch C. E. Mattison, Pasadena, Calif., vice presidents; Dr. Jacob Diner, New York, treasurer; Dr. Alpheus F. Jennings, Detroit, editor, and Dr. William J. Mallory, 1720 Connecticut Avenue, Washington, D. C., secretary. The next annual convention will be in Washington, D. C.

Wassermann Test for Federal Prisoners.—The department of justice at Washington announces that it will apply the Wassermann test to all inmates of federal prisons and correctional institutions. The Wassermann test has heretofore never been applied to all federal prisoners. Through the cooperation of the University of Kansas, the department of justice announces, opportunity was presented for applying the test to convicts at Leavenworth at a minimum expense, and the Attorney General decided to initiate the plan for all federal prisons. Mr. Sargent said in his statement:

> Under recommendation of the federal prison authorities of the department of justice, steps have been taken for the application of the Wassermann blood test in the various penal and correctional institutions of the government. To some extent these tests have been taken at Atlanta and McNeil Island penitentiaries. A recommendation has been received from the prison inspector for the making of the blood tests at the Leavenworth penitentiary, and arrangements have been made with the University of Kansas Medical School for assistance in taking the Wassermann tests for the entire convict personnel of that pentitentiary.

Through the cooperation of the Kansas University, tests will be made on the 3,000 inmates of Leavenworth at a cost of not more than $750, and the work will be done within the next ninety days. Medical treatment will be given, in such cases as prove necessary, although such treatment has never before been undertaken by prison authorities.

Society News.—At the annual meeting of the American Psychiatric Association, New York, June 8-11, Dr. George M. Kline, Boston, was elected president; Dr. Adolf Meyer, Baltimore, vice president, and Dr. Earl D. Bond, Philadelphia, secretary-treasurer. The next annual meeting will be in Cincinnati, May, 1927.——Dr. Ethan Allen Gray, Chicago, was elected president, June 17, of the Mississippi Valley Conference on Tuberculosis.——At the annual meeting of the American Orthopsychiatric Association, June 5-6, Dr. Herman M. Adler, Chicago, was elected president; Dr. George H. Reeve, Cleveland, vice president; Dr. Arnold L. Jacoby, Detroit, secretary-treasurer, and Dr. Karl A. Menninger, Topeka, editor.——Dr. Adolph Stern, New York, was elected president of the American Psychoanalytic Association at the annual meeting, June 10, and Dr. Clarence P. Oberndorf, New York, secretary.——At the annual meeting of the American Ophthalmological Society, June 14, Dr. William Zentmayer, Philadelphia, was elected president, and Dr. Emory Hill, 501 East Franklin Street, Richmond, Va., secretary. The next annual meeting will be at Quebec, Canada.——At the annual meeting of the National Association for the Study of Epilepsy, New York, June 7-8, Dr. George Kirby Collier, Rochester, was elected president; Drs. Dan S. Renner, Skillman, N. J., and Thomas B. Bass, Abilene, Texas, vice presidents, and Dr. Arthur L. Shaw, Utica, N. Y., secretary-treasurer. The next meeting will be held at Cincinnati.

American Hospital of Paris.—In the presence of about 1,000 persons, including the president of France, Marshal Foch and Ambassador Herrick, the new Memorial Building of the American Hospital of Paris was dedicated, May 12, at Neuilly-sur-Seine. President Coolidge sent a special message through the ambassador, which was read at the ceremonies. The new 120 bed building, said to be the equal in arrangement and equipment of the best hospitals in America, represents an expenditure of about a million dollars, which was contributed mostly by Americans; there are seventeen dedicated rooms, twenty-four dedicated beds and two memorial wards. Last year, the hospital admitted 813 patients, about one tenth of whom were on a free basis, and in the outpatient department cared for 2,617 patients for whom no charge was made.

In 1904, Americans in Paris started to build a hospital for Americans who became ill while in Europe; this ten bed institution was soon enlarged to thirty-two beds, and that capacity has been inadequate for at least two years. Out of the older American hospital of Paris developed the American Ambulance, where many physicians and nurses of this country volunteered their services and cared for thousands of French wounded before the United States entered the World War. When our troops went to France, this military hospital was turned over to them as Military Hospital no. 1, and was maintained throughout the war by voluntary subscriptions mostly from America. The new building becomes therefore an enduring memorial to Americans who served in France.

New County Society Secretaries.—The following physicians have recently been elected secretary of the county medical society indicated:

Dr. Clarence L. Ayers, Toccoa, Ga., Stephens County Medical Society.
Dr. George E. Borden, Fall River, Mass., Bristol South District Medical Society.
Dr. Alexander H. Colwell, Pittsburgh, Pa., Allegheny County Medical Society.
Dr. Cora Z. Corpening, Virgina Beach, Va., Princess Anne County Medical Society.
Dr. William T. Easley, Greenville, Ill., Bond County Medical Society (reelected).
Dr. John M. Fulton, Audubon, Iowa, Audubon County Medical Society.
Dr. John H. Fowler, East Moline, Ill., Rock Island County Medical Society (reelected).
Dr. Victor A. McClanahan, Aledo, Ill., Mercer County Medical Society (reelected).
Dr. Peter J. McDermott, Kewanee, Ill., Henry County Medical Society.
Dr. William A. Meierding, Springfield, Minn., Redwood-Brown Counties Medical Society.
Dr. Charles Moline, Sunderland, Mass., Franklin District Medical Society.
Dr. Robert Motley, Jr., Dyersburg, Tenn., Dyer County Medical Society.
Dr. Joseph L. Murphy, Taunton, Mass., Bristol North District Medical Society.
Dr. John J. Pendergrass, Leonard, Texas, Fannin County Medical Society.
Dr. Hiram V. Reeves, El Campo, Texas, Wharton-Jackson Counties Medical Society (reelected).
Dr. Claude D. Scaff, Clarksville, Texas, Red River County Medical Society.
Dr. William H. Smith, Benton, Ill., Franklin County Medical Society.
Dr. Deering G. Smith, Nashua, N. H., Hillsborough County Medical Society.
Dr. Ralph E. Stone, Beverly, Mass., Essex South District Medical Society.
Dr. Guy H. Swearingen, Sac City, Iowa, Sac County Medical Society.
Dr. Richard E. Valentine, Tallula, Ill., Menard County Medical Society.
Dr. Benjamin S. Walker, Corydon, Iowa, Wayne County Medical Society.
Dr. Luther O. Whitman, Northampton, Mass., Hampshire District Medical Society.
Dr. Franklin E. Williams, Vienna, Ga., Dooly County Medical Society.
Dr. Edward F. Yeager, Mineral Wells, Texas, Palo Pinto County Medical Society.

United Fruit Company.—This company operates hospitals at Preston, Cuba; Port Limon, Costa Rica; Almirante, Panama; Banes, Cuba; Tela, Honduras; Santa Marta, Colombia; Quirigua, Guatemala, and Puerto Castilla, Honduras, in which in 1925 the total daily average number of patients was 1,064, all of whom, except 189, were employees of the company. The average disability rate (total or partial) among the employees was 25.31 per thousand, and the death rate 13.2. The various respiratory diseases were responsible for 28.54 per cent of the mortality; lobar pneumonia causing more deaths than any other disease in the tropical divisions, malaria causing 14.18 per cent of the deaths; pulmonary tuberculosis, 5.46, and organic heart disease 5.17 per cent. During the year, 12,944 cases of malaria were treated in the company's hospitals, and 103 deaths were directly attributed to that disease; of these fatal cases the blood was positive for malaria parasites in ninety-six; hookworm disease among the laborers seemed to be of minor economic importance as compared to malaria. The fourteenth annual report of the medical department, prepared by Dr. William E. Deeks, has statistics about each division and hospital and reports on tropical diseases by the company's physicians, and papers published by permission of Dr. Aldo Castellani, Tulane University, New Orleans, on "Pruritus Ani and Pruritus Vulvae of Mycotic Origin," and by Richard P. Strong, Harvard University Medical School, on "Spirochetal Infections of Man." During the year, Dr. Roland C. Connor was appointed assistant general manager of the medical department. Dr. Connor spent eighteen years in the Canal Zone, during eleven of which he was chief of the medical clinic at the Ancon Hospital. The following physicians resigned: Dr. Edward B. Ross, Jr., superintendent of the hospital at Preston, Cuba; Dr. Claud M. Winn, superintendent of the hospital in Puerto Castilla, Honduras, and Dr. Eduardo Urueta, superintendent of the Santa Marta Hospital, Colombia. To fill these vacancies the following appointments have been made: Dr. Jaime de la Guardia, formerly of Santo Tomas Hospital, Panama; Dr. Bruce M. M. Phelps, transferred from the Almirante Hospital, Panama, to the Puerto Castilla Hospital; Dr. Otto T. Brosius, formerly of the Ancon Hospital and the Santo Tomas Hospital, succeeds Dr. Phelps as superintendent at the Almirante, and Dr. Lawrence M. Drennan was engaged as superintendent of the Santa Marta Hospital, Colombia.

LATIN AMERICA

Plague in Ecuador.—There were three cases of human plague in Guayaquil between April 16 and May 15: among 20,040 rats examined during the same period, seventy-four were found to be plague infected.

Society News.—The Argentine Medical Association has elected as president Dr. C. Bonorino Udaondo; secretary general, Dr. M. L. Pérez; director of publicity, Dr. J. Galán, and treasurer, Dr. E. M. Pueyrredón. The *tribunal de honor* comprises Drs. P. Escudero, E. V. Segura, E. Finocchietto, A. Peralta Ramos and B. Maraini.——Dr. M. M. Torino is the newly elected president of the Argentine Academy of Medicine at Buenos Aires.——The newly elected officers for the Chile Surgical Society are Drs. Caupolican Pardo, president; Alvaro Covarrúbias, vice president; F. Opazo, secretary general; A. Inostroza and M. Matus, annual secretaries, and M. Torres B., treasurer.——Dr. A. A. Enriquez is the new president of the Buenos Aires Obstetric and Gynecologic Society.

Personal.—Dr. Rocha Lima, who has been professor of tropical diseases at the University of Hamburg for some time, has returned to his former position as chief of the Brazilian institute of microbiology; he resumes his connection with the Instituto Oswaldo Cruz.——The *Folha Medica* states that the three medical societies of Rio de Janeiro held a joint meeting to welcome Dr. Miguel Couto, president of the Academia de Medicina, from his trip abroad.——The Hamburg medical faculty recently conferred a gold medal on Dr. J. A. Beruti, professor of obstetrics, University of Buenos Aires, for research in his specialty.——The *Semana Médica* relates that Prof. Robertson Lavalle was given a complimantary dinner recently in tribute for his implant method of treating joint tuberculosis.

FOREIGN

Cultist Penalized.—The *Deutsche medizinische Wochenschrift* relates that the Hanover court recently sentenced a faith healer to three months' imprisonment for manslaughter from neglect of due caution. She had allowed a person with grave heart disease to be up and about, contrary to the orders of the physician who had enjoined strict bed rest.

The New Dairen Hospital.—The Dairen General Hospital, Dairen, South Manchuria, moved into its six story building, April 17-23; the new main building accommodates 431 beds, while the isolation hospital, a separate building, contains 150 beds. Dr. G. Totani, who is superintendent of the hospital, studied at the University of Cambridge, England, and Dr. H. Yanagihara, chief of the dermatologic department, recently returned from an extended tour of study to the United States and Europe.

New Surgical Department at Edinburgh.—During the two hundredth anniversary of the medical faculty in the University of Edinburgh, June 11, the reorganized surgical department was formally opened. The department comprises now two parts—a department for teaching and a department of surgical research in separate and contiguous buildings, the former housed in a reconstructed building, which, for generations of students, has been associated with the teaching of surgery, and the latter in a new building, both admirably arranged for the convenience and comfort of teachers and students.

Personal.—About 200 friends of Sir St. Clair Thomson gave a dinner in his honor, June 4, at the Hotel Victoria, London, England, and presented him with a massive silver drinking cup in recognition of his merits in the field of science and as a retired official of the Royal Society of Medicine.——Dr. J. Fibiger, Copenhagen, presided at the Scandinavian Pathology Congress, which met in July; the reticulo-endothelial system was the main topic for discussion.——The *Deutsche medizinische Wochenschrift* states that Dr. Leonor Michaelis, who has been professor of biochemistry for several years at Nagoya University, has accepted a call to Johns Hopkins University as professor of research medicine.——Dr. E. Peiper, director of the university pediatric clinic, Greifswald, was given honorary citizenship, recently, on the occasion of his seventieth birthday.——Dr. E. Weiss of the spa Pistyan is to deliver a course of lectures on "Ectoscopy" (diagnosis by the naked eye). The *Münchener medizinische Wochenschrift* states that the lectures are free, with reduced rates for board and lodging for those attending the course. His method was described in The Journal, June 19, 1926, p. 1952.

Deaths in Other Countries

Prof. **Edward Babak**, dean of the medical faculty and professor of physiology at Masaryk University, Czechoslovakia, May 29, aged 53.——Dr. **F. B. Hofmann**, professor of physiology at the University of Berlin, aged 56.——Dr. **J. Kratter**, emeritus professor for forensic medicine at the University of Graz, aged 78.——Dr. **R. Barlow**, professor of dermatology at the University of Munich, aged 62.

Government Services

Officers Ordered to Foreign Duty

Orders issued by the U. S. Public Health Service, June 2, assigned Surg. Charles M. Fauntleroy, Ellis Island, to duty at Cologne, Germany; Surg. Richey L. Waugh, Ellis Island, to duty at Cobh, Irish Free State; P. A. Surg. Milton V. Veldee, Cincinnati, to duty at Copenhagen, Denmark; P. A. Surg. Marion R. King, Washington, D. C., to duty at Dublin, Ireland; P. A. Surg. Le Grand B. Byington, Washington, D. C., to duty at Stuttgart, Germany; P. A. Surg. Russell R. Tomlin, New Orleans, to duty at Liverpool, England; Surg. R. L. Wilson has been relieved from duty at Ellis Island, N. Y., and assigned to duty at Rotterdam, the Netherlands; Surgeons W. C. Teufel, W. F. Tanner, and J. F. Mahoney have been assigned to duty at Hamburg, Stuttgart and Bremen, Germany, respectively; P. A. Surg. Francis A. Ashford has been assigned to duty at Bergen, Norway, and P. A. Surg. Lynne A. Fullerton, relieved from duty at Cobh, Irish Free State, and assigned to duty at Oslo, Norway.

Veterans' Bureau Personals

The June Veterans' Bureau Medical Bulletin notes the following resignations from the veterans' bureau: Dr. Harold T. Bibber, Edward Hines, Jr., Hospital, Maywood, Ill., Feb. 17, 1926; Dr. William G. Cassels, as clinical director at Hospital no. 60, Oteen, N. C., March 1, 1926; Dr. Walter K. Foley, Hospital no. 68, Minneapolis, Minn., April 3, 1926; Dr. Meredith W. Hyatt, Hospital no. 79, Outwood, Ky., March 31, 1926; Dr. Karl Schaffle, as bureau representative medical council, central office, May 5, 1926.

Navy Personals

Lieuts. Elmer F. Lowry and Edwards M. Riley, Medical Corps, U. S. Navy, have been qualified for promotion to the rank of lieutenant commander, and Lieuts., junior grade, Asa G. Churchill, Willard S. Sargent and John M. Brewster have been found qualified for promotion to the rank of lieutenant.

The Government Needs Physicians

The U. S. Civil Service Commission announces an open competitive examination for medical officers in which the applications for positions will be rated as received at Washington, D. C., until December 30. Competitors will not be required to report for the examination at any place, but will be rated on their education and training and experience. There are vacancies in the Indian Service, public health service, coast and geodetic survey, Panama Canal Service, Veterans' Bureau and other branches. The entrance salaries range from $1,860 a year to $5,200. Senior medical officers may be promoted to $6,000 after six months, and higher salaried positions may be filled through promotions in accordance with civil service rules. Physicians are especially needed in the specialties, and in general medicine and surgery.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 19, 1926.

Child Welfare in New Zealand

Visitors to New Zealand often comment on the good health of the children. The country is prosperous, the climate is healthful and the life is good. But much of the health and happiness, both in infancy and in later years, is directly due to the system of training and nursing founded by Sir Truby King nineteen years ago. He held that if mothers were trained on common sense lines to give their babies a good start in life, the first battle of the campaign would be won. So the Royal New Zealand Society for the Health of Women and Children was formed; but the mothers, who owe so much to the organization, call their children "Plunket" babies. Lord Plunket was governor of New Zealand in the first years of the activity of the society, and he and Lady Plunket did much to encourage the work. Under their patronage the Plunket nurses first went out to spread the gospel of healthy babyhood. Now the Plunket system operates from end to end of New Zealand. The Society badge displays the motto: "To help the mothers and save the babies." Sir Truby King, the founder of the society and its moving spirit today, has stated that its policy is "to bring simple common sense, enlightenment, and accurate scientific knowledge and conviction as to the fundamental needs of mother and child into the homes, lay and professional."

The methods are simple. In various centers there are baby hospitals which are also training centers for Plunket and Karitane nurses. The Plunket nurses are qualified midwives who are given a further training in child rearing. The Karitane nurses are not midwives, but are trained to act as baby nurses in private homes. On the completion of their training the Plunket nurses are drafted to the various centers, and their services are then available for all mothers from the antenatal period to the time when the child is out of hand. No fees are charged, even to those who can well afford to pay, for it is desired that assistance should be sought by all and that none should lose the help either because of the cost or because of any distinction between those who pay and those who do not. The offer of help is carried to every home. A few days after a birth is notified to the registrar, the parents receive a letter from the nearest Plunket center offering the advice and assistance of the Plunket nurse.

The value of the system is shown by the way it has extended. There are now more than sixty residential branches of the society employing more than a hundred Plunket nurses, and it is anticipated that by the end of the year the number will be about 120. About 400 subcenters are visited by the nurses from the sixty residential centers. The present estimate of the society is that the minimum proportion of Plunket nurses to the population in order to do full justice to the work should be at least one nurse to each 10,000 of the population, and this, with a birth rate of, say, 23 per thousand, would mean that each nurse would have 230 new babies and 230 new mothers under her care if all availed themselves directly of the Plunket service.

The work has spread beyond New Zealand. In 1918, Sir Truby King established a mothercraft training center and baby hospital in London. Institutions on similar lines are in operation in Australian centers, and one was recently established in Cape Town. Many Australian nurses come to New Zealand for training, and there are Plunket nurses even in Palestine and in remote mission fields. The Plunket nurse is not, however, the whole of the system. There are the mothercraft homes and baby hospitals, called Karitane hospitals from the location of the one first established in Dunedin. In these hospitals, nurses are trained and sick babies receive care.

Since the Plunket system was set on foot, the deaths of babies under 1 year have dropped from 75 per thousand to 40, a world's "record." Gastro-enteritis and infantile diarrhea, at one time responsible for the death of twenty-five babies in 1,000, is now a minor cause of death. In the last three years this one-time scourge of infancy has not caused a death in Dunedin. Sir Truby King and the society, with the active cooperation of the health department, are now giving special attention to antenatal care with a view to lessening mortality in the first month of babyhood, now the most dangerous period. The government last year provided a special vote of $72,500 for the erection of special accommodation attached to the Karitane-Harris Hospital at Dunedin, so that maternity nurses might be given a short intensive refresher course of a month or six weeks, devoted mainly toward the feeding and care of the child in the first month of life.

The London Hospital in the General Strike

How work in several departments of the London Hospital was brought to a standstill, entailing suffering on patients as a result of the cutting off of electric current during the general strike, was described by Viscount Knutsford, chairman of the hospital at the quarterly court of governors. On the first morning of the strike, the electric current was cut off from the hospital. The days were very dark, with the result that, whereas, as a rule, they conducted about fifty serious operations every day, they were unable to carry out any at all. They could not get the operating theaters lighted, and they could not bring the patients up to the theaters. The Finsen light department for lupus had to be closed. The treatment of rheumatism, neuritis and other maladies by radiant heat baths and other forms of electrical treatment was stopped, as was all treatment of cancer and other diseases by roentgen rays. The examination of eye, ear, throat and nose cases had to be discontinued. Operations for cancer and other diseases by cauterization could not be performed. All electric elevators were stopped, and this caused untold inconvenience. All wards and the outpatient departments are fitted with electric sterilizers, and these were out of use. A good deal of the work of the research laboratories was stopped, owing to the dependence on electric motors and light. The workshops attached to the operating theaters, where instruments are mended and sharpened, were also put out of use, while the machinery for grinding drugs for medicines and for making pills and tablets was stopped. The electric drying apparatus in the laundry could not be worked. The general council of the trades union congress, when it issued its pronouncement relating to the general strike, assured the public that it would look after the hospitals. The patients should have their milk and their food, their light and their heat, without let or hindrance. But on the very first morning of the strike (Tuesday) the electric current was cut off with the disastrous effects described. Lord Knutsford went to the offices of the electrical trades union and laid the case before them. The union graciously issued a permit authorizing the supply to the hospital of electricity during the day. But still the light was not turned on, and all day on Friday none was available. The electricians disregarded the union's permit. At last, on Friday night, communication was opened up with the chairman of the Stepney trades council, which, during the strike. dubbed itself the Stepney council of action. When this dictator was asked why the hospital was deprived of its light by day he "alluded to a statement" going about the district that its outpatient department had been closed in order to enable the physicians to do "blackleg" work. Lord Knutsford bluntly characterized this as "a lying statement." The department had been closed because it could not be lighted, and for no other reason. That was the wretched justification offered, however, and the light was not turned on until late on Saturday, and work could not be resumed till Monday. In a previous letter, a similar complaint of "blacklegging" was made by strikers in connection with Guy's Hospital, and it has also given trouble in Edinburgh. Mendacity characterized a good deal of the strikers' propaganda.

ITALY

(From Our Regular Correspondent)

May 30, 1926.

Hydrologic Legislation

A recent decree published in the *Gazzetta ufficiale* provides that the name of an authorized mineral water and the essential characteristics of its label may not be employed to designate salts destined for the extemporaneous preparation of mineral waters. The labels used to designate such salts must give the qualitative and quantitative representation of the substances that they contain.

The National Federation of Medical Societies

April 17, the general assembly of the Federazione degli ordini dei medici met in Rome under the chairmanship of Professor Gallenga, who presented his resignation, together with that of the federation council. The conventionists passed a resolution to go over to the syndicates of the Fascists. Dr. Fioretti was elected president.

The Associazione fra aiuti e assistenti universitari also has decided to go over to the national syndicates and has elected Professor D'Amico secretary.

Ovation in Honor of Prof. Domenico Barduzzi

Under the auspices of the Pisa Medical Society and of the medical journal *Terme e riviere*, a celebration was held recently at the University of Siena in honor of Prof. Domenico Barduzzi, director of the Dermosyphilopathic Clinic, who is resigning from his post on account of having reached the age limit. Numerous colleagues, pupils and friends presented him with a beautiful medal and also a volume containing writings and documents collected in his honor. To the chair of clinical dermosyphilopathy the medical faculty has called Prof. Ludovico Tommasi.

A "Flower Festival," or Tag Day

A circular letter issued by Hon. Federzoni, minister of the interior, announces that in every commune of Italy, on the first Sunday in June, a symbolic flower will be sold. The proceeds of the sale will be used for tuberculosis work. In important cities, propaganda films will be shown.

Meeting of the Italian Society for the Study of Sex Problems

At the meeting of the Società italiana per lo studio delle questioni sessuali, held in Rome, recently, Prof. Silvestro Baglioni of Rome spoke on the subject of "The Sexual Psychology of Childhood." He holds that, in the first years of life, the child has not, strictly speaking, a sexual instinct or tendency. The interest of the child in sex is awakened by an artificial superstructure, such as reading and lectures, which arouse in him a morbid curiosity and lead to the perception of feelings and to fantastic images that would not otherwise be aroused in him until later in life. He criticized the onesidedness of the freudian conception, which tends to view everything from the sexual standpoint, whereas the greater part of the manifestations of life (especially during childhood) are referable to the instinct of self-preservation.

Medicopedagogic Consultation Center

At the Institute of Experimental Psychology in the University of Rome, a special medicopedagogic consultation center for antisocial juveniles was opened during the past month. The directors and consultants are Professors Ottolenghi and De Santis. The object of the consultation center is to examine, from the anthropologic and psychologic point of view, juveniles affected by anomalies of character or conduct of an antisocial nature. Social welfare workers will then interest themselves in the physical and moral reeducation of the subjects referred to them.

Biotypologic Institutes

For some time past, Prof. Nicola Pende of Genoa has advocated in the medical press and to the national government the establishment of institutes for the study and medicosocial evaluation of human constitutions or biotypes. A recent decree of the minister of public instruction provides for the creation in Genoa of the first of such institutes. It will be located in the Medical Clinic, and Professor Pende will be the director.

The New Law Pertaining to the Protection of Children

The new law pertaining to the protection of mothers and children provides for a national organization, to which numerous duties are delegated, such as aid to expectant mothers and to deserted mothers without means, the organization of free-milk stations and of maternity consultation centers, and the creation of ambulant obstetric centers. The organization will provide, furthermore, for children's dispensaries, health protection for young children, and physical and moral protection for juveniles in school, office and workshop. But the essentially new feature of the law is special restrictions and prohibitions with regard to children or minors. Juveniles under 16 years of age are prohibited from drinking intoxicating beverages in educational institutions or in public places. It is a misdemeanor to sell or give tobacco of any kind to children or juveniles, and the latter are prohibited from smoking in public. The law also restricts the employment of children in the preparation of motion pictures, in circuses, and in all public exhibitions whatever, but allows greater liberty to theaters in the representation of lyric and dramatic works and to motion pictures of an educational scope. Similar restrictions are placed on children in the matter of attending representations of motion pictures, they being limited to films depicting works of art, historical episodes, and scientific, industrial and agricultural experiments, and excluding everything that might prove to be of a passionate or exciting nature. Announcements of motion pictures must indicate whether children under 15 years of age may be admitted.

A New Antituberculosis Pavilion

A new antituberculosis pavilion was recently inaugurated at Milan.

Professor Maragliano Resumes Position in the University

In August, 1924, Prof. Edoardo Maragliano, who was director of the medical clinic of the University of Genoa, reached the age limit and was retired. Recently, however, Professor Maragliano, who is in full possession of his strength and intellect, has resumed university instruction at Genoa as *libero docente*. His course is on the pathology and clinical aspects of tuberculosis. Professor Maragliano is one of the most eminent phthisiologists in Italy.

RIO DE JANEIRO

(From Our Regular Correspondent)

May 15, 1926.

Magnesium Sulphate in the Treatment of Eclampsia

Dr. A. de Moraes has reported before the Medical and Surgical Society some cases of eclampsia treated with intravenous injections of from 10 to 20 per cent magnesium sulphate solution. While such a small series does not justify drawing definite conclusions, there seems to be no question as to the value of the method for controlling the convulsions. Lazard in his first cases used, in addition to magnesium sulphate, bleeding, gastric lavage, glucose solution and morphine, but afterward depended exclusively on magnesium sulphate. Moraes did not have any mishap among his cases, but had always calcium chloride on hand, to block any possible respiratory paralysis. The disappearance of the edema is very striking, as well as the recovery from the torpor, and even coma. Among Moraes' eight cases, there were three deaths. One was in the first patient treated with the new method almost as a last resource, and the other two had no connection with this treatment.

Rare New Growth of the Abdomen

Dr. O. Penna described to the Academy of Medicine a case of rare growth in the abdomen. It proved to be a neuroma of the sympathetic ganglions. The diagnosis was confirmed by Professor Masson in France and Professor Sellen in Germany. The histologic examination showed the true character of the tumor, which weighed 3,800 Gm. In the discussion, Dr. Moreira da Fonseca referred to the similarity of the symptoms to those observed in Recklinghausen's disease. Among twelve cases of this condition, in only four or five were there growths in the peripheral nerves; there were none at all in the abdominal sympathetic system.

Aneurysm of the Femoral Artery

Dr. J. Monjardino described at the same meeting a surgical case of an enormous aneurysm of the femoral artery. The operation proved most successful, and the patient is now in excellent condition. In order to protect the patient's vitality, after tying the external artery, he did not try removal of the sac, but limited himself to opening and emptying the aneurysm, which brought about the obliteration of the sac.

GENEVA

(From Our Regular Correspondent)

June 10, 1926.

"Doctor Knock"

For the last eighteen months an amusing medical comedy has been running at the Paris and Geneva theaters, entitled "Doctor Knock," by Jules Romains, who himself is a physician as well as a dramatist; hence he brings to this piece an intimate knowledge of his profession as well as a very modern mind about letters. Dr. Knock is a mixture of medical man and quack, mostly quack. His object in life is to put money in his purse, although he incessantly describes himself as a devotee of medical science. He buys the practice of Dr. Parpalaid at St. Maurice, making the bargain by post, and finds when he arrives in St. Maurice that the practice hardly exists. The inhabitants of that place are nearly all healthy: a pretty prospect for young and impecunious Dr. Knock. So he decides to persuade the people of St. Maurice and the surrounding district that they are all frightfully ill, from malignant diseases of long evolution, or that they are suffering from incipient maladies that may become malignant; and in three months he has the local hotel turned into a hospital, and every bed in the place is occupied by a perfectly healthy person who is convinced that he or she is on the verge of the grave. The druggist quintuples his income; Dr. Knock himself has an astrakhan coat and an expensive motor car; and everybody in the town is swallowing pills or tablets or some sort of medicine. No wonder that Dr. Parpalaid, when he returns to St. Maurice to collect the first instalment of the purchase money, feels inclined to cry off the bargain; but so persuasive is Dr. Knock that before he knows what is happening to him, Dr. Parpalaid, too, is swallowing pills and getting ready to go to bed. The play was produced in London a few weeks since, so it will soon be seen in the United States. If the English version of the French is well done and if the acting is good, the physician will pass a heartily merry evening. But the play requires brilliant acting as well as brilliant production if it is to amount to anything. It is an excellent satire on Coué's methods of treatment.

Pancreatitis

The subject of pancreatitis is preoccupying the Swiss medical profession. A clinical sign not generally known is that, if the patients are kept under observation long enough, an inverse type of temperature will frequently be noted with an evening drop, or at least no evening rise. Thanks to this sign, a diagnosis has often been possible in doubtful cases. The rational treatment of mild chronic pancreatitis is still a moot subject. The etiology must never be overlooked. Hepatic colic is an indication for operation, while gastric or duodenal ulcers require medical or surgical treatment. Pancreatic preparations are indicated when signs of pancreatic insufficiency are present and may give good results. The diet should be regulated according to the signs of insufficiency, and the best guide is examination of the feces. Fasting and extragastric administration of liquids are the best means of giving rest to the pancreas. For some time past, the Swiss surgeons have been operating in chronic pancreatitis in order to obtain permanent drainage by cholecystenterostomy or choledochoduodenostomy, with not a little success. Incision of the capsule of the pancreas has also been found to cause retrogression of the symptoms, but the more advanced the atrophy of this gland, the less is to be expected from surgical intervention. In pancreatic necrosis, operation is urgently required and Swiss statistics show that 66 per cent of patients recover; but even a delayed operation may sometimes be successful, and the Swiss surgeon Guleke says that here again one should operate, as this is the best means of preventing the development of a chronic pancreatitis.

Society for Mental Hygiene

The Geneva Society for Mental Prophylaxis, founded in 1906, recently celebrated its twentieth anniversary, and on this occasion a lecture was delivered by Dr. Gentil-Perrin of Paris. The lecturer stressed the contemporary movement in favor of mental prophylaxis, which was set in motion in the United States, in 1909, by Adolf Meyer and William James, and stated that it was the American Committee of Mental Hygiene that had inspired all similar European institutions. In 1920, Dr. Toulouse founded the French League of Mental Hygiene, with the collaboration of Justin Godart, Frederick Brunet and Henri Roussel. In 1921, the lecturer himself founded the service of mental prophylaxis at the St. Anne hospital for the insane at Paris.

Case of Primary Sarcoma of Spleen

A case of primary sarcoma of the spleen has recently been observed at the medical clinic of the University of Geneva (service of Professor Roch) and has been studied by Dr. E. Terzian. Terzian's patient died before operation could be done; the spleen weighed 80 Gm. and did not extend below the costal border. The tumor felt on palpation proved to be a retroperitoneal mass of lymph nodes, the result of metastasis. As pointed out by Professor Roch the most difficult differential diagnosis is between tuberculous splenomegaly and primary sarcoma of the spleen.

Association of Abstaining Swiss Physicians

An appeal to the Swiss medical profession to join a newly founded antialcoholic organization—the Association of Abstaining Swiss Physicians—has just been issued. It is pointed out that alcoholism is a social disease that must be suppressed. According to Professor Millier, who is not an abstainer, the Swiss people consume a quantity of alcohol four or five times greater than he considers inoffensive. In Switzerland, 25 per cent of admissions of male patients to insane hospitals are due to alcoholism, as well as several thousand deaths annually. Today the physician by his teaching and his example should be a champion of sobriety.

Birthday of Professor Sahli

May 27, the Faculty of Medicine of Berne celebrated the seventieth anniversary of Prof. Hermann Sahli, who has filled the chair of clinical medicine for nearly forty years at the University of Berne. On this occasion the municipal council announced that it had decided that one of the streets of Berne should bear the name of Hermann Sahli.

Death of Dr. Hotz

Dr. G. Hotz, professor of clinical surgery, and chief of the surgical clinic of the University of Basle, died on June 4, at the age of 46, from a chronic gastric affection. Professor Hotz was well known for his writings on abdominal and intestinal surgery and also for blood transfusion.

Retirement of Dr. Roux

It is officially announced that Dr. César Roux, professor of clinical surgery at the University of Lausanne, will retire, October 15. Dr. Roux has been chief of the surgical service of the cantonal hospital since March, 1887, and professor since 1890. His world-wide reputation renders comment unnecessary.

JAPAN

(From Our Regular Correspondent)

June 15, 1926.

Decoration and Medal for Physicians

Dr. Charles Achard, general secretary of the medical section of the French Academy, who has been in this country since last March, has been decorated by the emperor of Japan.

Baron Dr. Kitasato, who became a member of the Royal Society of London in 1907, has lately been presented with the honorary medal from the institute. He is the first who has been honored with this medal in the Far East.

New Medical Institutes of Tokyo University

The urologic and physical therapeutics departments in the medical college of the Tokyo Imperial University, which have been attached to other institutes of the college, are to be established as independent institutes: each institute will have its staff, consisting of a professor, an assistant professor and two assistants. Drs. Negishi and Manabe will be appointed directors of the urologic and the physical therapeutics institutes, respectively.

Pan-Pacific Science Congress

The third meeting of the Pan-Pacific Science Congress is to be held in Tokyo, for about ten days, from October 30 till November 11. A number of delegates from quarters bordering on the Pacific Ocean have signified their intention of attending the meeting. Dr. Wilbur of Stanford University is to be medical delegate from the United States of America. English will be the official language of the meeting. The following three topics will be discussed in the medical section:

1. The distribution, prevention, and treatment of various diseases endemic on the coasts of the Pacific Ocean.
2. The distribution, symptoms, prevention and treatment of amebic dysentery, ancylostomiasis and schistosomiasis (japonicum).
3. The relation between the climate at various points on the coast of the Pacific Ocean, and the food, clothing and residence of the inhabitants there.

There will be tours to Hokkaido, Nikko and Hakone from the 18th till the 29th of October, before the meeting. After the meeting, another tour will include Kyoto and Nara, old capitals; Osaka, center of industry and commerce; Kyushu, Shikoku and Miyajima.

Saiseikai Charity Association

The Saiseikai Charity Association was organized in 1911 according to the wishes of the late Emperor Meiji, who was very kind to the poor and sick and made a personal donation to the funds of the association. Funds and number of members are now greatly increased. Six charity hospitals are established in Tokyo, and there are 103 consulting offices throughout the country. May 31, the association will hold its fifteenth anniversary in Tokyo, and the empress will attend.

Law Concerning Cow's Milk

The health bureau of the home department is intending to amend the present law regulating the sale of cow's milk, which was enacted in 1900, and has proposed certain topics to be discussed in the meeting of experts. These topics will include regulation of the production, pasteurization and grading of milk and the manufacture of milk products.

Nurses and Typhoid

As a method of prevention of typhoid, the health department of the metropolitan police has ordered the police stations in Tokyo to examine nurses and assistant nurses. In 1924, 145 nurses, and in 1925, seventy-five nurses in Tokyo died of typhoid. The authorities are intending to eliminate bacillus carriers among nurses.

Golden Anniversary of Hokkaido University

The Hokkaido Imperial University celebrated its golden anniversary, June 14, presided over by Professor Sato, president of the university, in the presence of Prince Takamatsu, other men of distinction, and more than 1,500 people, including former professors and old graduates of the college.

In the ninth year of Meiji, an agricultural college was established at Sapporo by the governor of Hokkaido, Count Kuroda. Prof. Dr. William Clark came from the Massachusetts Agricultural College, accepting the position of adviser to the governor, and set up the college after the fashion of American colleges in the city of Sapporo, a beautiful place, with elm trees along broad streets. The American pioneer transplanted American civilization into this northern part of young Japan, and cultivated his pupils morally as well as intellectually. He is gone, but his famous saving, "Boys, be ambitious!" is still living, and now in the university are three colleges, including agriculture, medicine and engineering.

On the 30th, when Professor Sato called at the hotel of Prince Takamatsu, the prince asked several questions about the university, and was pleased to donate some money to encourage the faculty in researches for developing Hokkaido.

Income and Nourishment

Beginning in September this year, and ending in August next year, the statistics bureau of the government will investigate the relation between income and nourishment. The authorities will select some suitable families in Tokyo and five other cities, and in seven prefectures in different districts of this country, and will give them a household book prepared for recording daily income and expenditure. Dr. Takahira of the government dietetic laboratory is to employ the household books in deciding standard caloric value of nourishment.

The Japan White Cross

The Japan White Cross Society, which was established in 1910 and has done much antituberculosis work since then, celebrated its fifteenth anniversary in Tokyo, May 29. The health bureau of the department of home affairs has advised the governors of Tokyo, Kioto and Oskato to establish prefectural tuberculosis sanatoriums and consultation offices in their prefectures.

The Japan Epidemic Association

Antiepidemic organization is almost perfect in this country, but synthetic studies of epidemics are rather neglected.

An association is projected for making synthetic studies of epidemics and correlating the knowledge of scientists in colleges or laboratories and of private practitioners. June 1, a meeting was held in Tokyo and the regulations of the new society were drawn up. The association intends to publish a monthly magazine.

BERLIN

(From Our Regular Correspondent)

May 29, 1926.

The Congress of Psychotherapy

The Congress of Psychotherapy was held in Baden-Baden, April 17-19. Dr. Eliasberg of Munich delivered the address of welcome and Professor Sommer of Giessen the presidential address. Prof. H. Kehrer of Münster presented the first paper, on "Psychotherapy and Psychiatry." He brought out that psychotherapy was turning away from pure organo-anatomic research (notwithstanding the fact that such research had accomplished much in the field of brain pathology), and was studying the diseased psyche, discovering the individuality of the healthy and the diseased person, and was making incursions into the land of the almost unknowable (dream interpretation). Professor Schilder of Vienna spoke on the psychotherapy of psychoses. He advocates, in psychanalytic treatment, the occasional use of adjuvants in the form of drugs (hypnotics), in order to get in closer touch with the psyche. Hansen of Heidelberg discussed the relations between internal medicine and psychotherapy. He emphasized that psychic treatment must not lead to careless physical examination.

The third main paper was presented by Prof. H. Walthard of Zurich, on psychotherapy in relation to gynecology. Pains and hemorrhages in women may spring from psychic causes. If the gynecologist has ruled out all bodily causes, he will refer the person to the psychotherapeutist. Prof. Hans Maier of Burghölzli discussed the details of the collaboration with the Women's Clinic. Which method of treatment (hypnosis, analysis, catharsis, persuasion) it is best to employ must be left to the judgment of the psychotherapeutist.

Professor Sommer treated the problems of predominant and of subordinated ideas and the significance of the play of the facial muscles. With the approval of the assembly, he wired greetings to Professors Forel and Freud. Sack of Baden-Baden reported on dermatologic affections and their psychotherapeutic treatment. H. Jaensch discussed the constitution in relation to the psyche. The pediatricians Professor Gött of Bonn and Professor Husler of Munich sounded a note of caution in dealing with the psyche of the child but reported good results.

During the discussion, Magnus-Hirschfeld of Berlin referred to the Bissky apparatus for the alleged electrical determination of special qualifications, which is being so widely advertised at the present time. The assembly decided to take no action in the matter until the scientific commission appointed to investigate the apparatus had made its report. Seif of Munich and Grünthal of Berlin called attention to the harm that was being done by psychanalytic treatment at the hands of unqualified laymen. Dr. Kläsi of Basel presented a paper on neuroses due to accidents. Professor Maier of Zurich stated that in such cases Switzerland had found it usually expedient to make a final money settlement, which was, of course, impossible under the present German law. Hahn of Baden-Baden considered the method proposed by L. Frank of Zurich of the living over again of forgotten conflicts in a half-waking condition for the purpose of building up the patient's personality.

The Female Population in Germany

Since the reorganization of Germany in 1871, there has always been an excess of women over men. June 16, 1925, the population of Germany was 62,539,098, of which 30,183,567 were males and 32,355,531 females. The excess of women over men was thus 2,171,964, or 7.20 per cent. In 1875, the excess was only 753,958, or 3.56 per cent. The condition is of course due to the fact that the war losses affected chiefly the men. The number of war dead will reach at least two million. In considering the figures for 1925, it should be recalled that, by the treaty of Versailles, the territory of Germany was diminished, and, furthermore, that, owing to the fact that the Saar region was not being administered by the German government, it could not be included in the census of 1925.

Census Year	Male Population	Female Population	Excess of Women	Number of Women to *1,000 Men*
1875......	20,986,701	21,740,659	753,958	1,036
1885......	22,933,664	23,922,040	988,376	1,043
1895......	25,661,250	26,618,651	957,401	1,037
1910......	32,040,166	32,885,827	845,661	1,026
1925......	30,183,567	32,355,531	2,171,964	1,072

If one examines the increase in population in the various German states, it will be seen that in every state the increase of the female population is vastly greater than that of the male population. However, the excess of females over males appears to be showing signs of diminishing through the natural relationship of births and deaths; for, during the intercensus period 1910-1925, the number of males who died was 2,550,000, in round numbers, and the number of female decedents was about 2,520,000, while 4,310,000 boys and only 4,010,000 girls were born. It will be seen that the excess of births over deaths was 1,760,000 for the males and only 1,490,000 for the females.

Marriages

Nelson Benson Sackett, New York, to Miss Elizabeth Noble Gray of Harwichport, Mass., July 6.

Henry Rex Amberson to Miss Nelle Davern, both of Chicago, at Crown Point, Ind., May 6.

Ernest G. Dittmer, Manchester, Iowa, to Miss Anna Rosell of Sioux Rapids, Iowa, June 7.

Louis C. Arp, Moline, Ill., to Miss Eleanor M. Harned of Davenport, Iowa, June 24.

Munson R. Bixel to Miss Hallie M. Moser, both of Pandora, Ohio, June 12.

Deaths

Dennis Alois McAuliffe ⊕ New York; Medical Department of the University of the City of New York, 1892; formerly professor of operative surgery, Fordham University School of Medicine, and adjunct professor of operative surgery and gynecology at the New York Post-Graduate Medical School; served during the World War; at one time on the staffs of the Penitentiary Hospital, Blackwell's Island, and the Brooklyn City Prison; on the staff of the Misericordia Hospital, where he died, June 14, aged 56, following a long illness.

Robert Bruce Wilson ⊕ Oriskany Falls, N. Y.; Syracuse University College of Medicine, 1894; served during the World War; on the staffs of the Faxton Hospital, Utica, Broad Street Hospital, Oneida, and Rome (N. Y.) Hospital; aged 53; died, May 23, of angina pectoris.

Wilbur Scott Conkling ⊕ Des Moines; Drake University College of Medicine, Des Moines, 1897; formerly assistant professor of surgery at his alma mater; served during the World War; aged 52; died in June, of chronic tuberculous pleurisy and chronic pericarditis.

Worth Scott George, Antioch, Calif.; Kentucky School of Medicine, Louisville, 1887; city health officer of Antioch for many years and formerly health officer of Contra Costa County; aged 71; died, May 20, of cerebral hemorrhage.

Edward James Meyer, Somerville, Mass.; Dalhousie University Faculty of Medicine, Halifax, N. S., Canada, 1893; member of the Massachusetts Medical Society; served during the World War; aged 56; died in April, of myocarditis.

Sarah C. Hall, Elgin, Ill.; Woman's Medical College of Pennsylvania, Philadelphia, 1870; formerly on the staff of the Mercy Hospital, Fort Scott, Kan.; aged 91; died, May 30, of hypostatic pneumonia and senility.

Henry C. Stuhr ⊕ Minneapolis; University of Minnesota Medical School, Minneapolis, 1900; on the staffs of St. Barnabas and Northwestern hospitals; aged 52; was killed, June 6, in an automobile accident.

Ralph Tenney Sowden, Slatedale, Pa.; University of Michigan Medical School, Ann Arbor, 1879; for many years president of the board of education; aged 75; died, May 30, of pneumonia, following influenza.

Preston R. Burrus, Nashville, Tenn.; Meharry Medical College, Nashville, 1889; emeritus professor of anatomy at his alma mater; also a druggist; aged 68; died, June 8, of angina pectoris and nephritis.

Joseph Hercule Roy ⊕ Kankakee, Ill.; University of Montreal Medical Faculty, Montreal, Que., Canada, 1886; aged 65; died, June 15, at the Mercy Hospital, Chicago, following an operation for carcinoma.

Frederick D. Williamson, Canisteo, N. Y.; Medical Department of the University of the City of New York, 1891; aged 61; died, March 25, at St. James Hospital, Hornell, of carcinoma of the pancreas.

Frank Lecortis McKinney, Galena, Kan.; University Medical College of Kansas City, Mo., 1908; member of the Kansas Medical Society; member of the city council; aged 47; died, May 15, of tuberculosis.

Joseph Wiley Harrison ⊕ Guthrie Center, Iowa; State University of Iowa College of Medicine, Iowa City, 1896; proprietor of a hospital bearing his name; aged 55; died, June 6, of septicemia.

Russell James Hemphill, Plymouth, Iowa; Northwestern University Medical School, Chicago, 1892; member of the Iowa State Medical Society; aged 63; died suddenly, April 30, of heart disease.

Josiah W. Dillon, Coshocton, Ohio; University of Wooster Medical Department, Cleveland, 1879; member of the Ohio State Medical Association; aged 73; died, May 2, following a long illness.

William T. Rogers, Trenton, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1885; aged 63; died, May 15, of cerebral hemorrhage following chronic interstitial nephritis.

Joseph Henry Lawrence, Pendleton, S. C.; Medical College of Virginia, Richmond, 1890; served during the World War; aged 55; was found dead, May 17, of a bullet wound received accidentally.

Jennie Esther Mathers, Nashville, Tenn.; University of Louisville School of Medicine, 1925; aged 26; died, April 21, of bronchopneumonia and septicemia, following a furuncle on the face.

Herbert Oswald Redden, Outlook, Sask., Canada; Queen's University Faculty of Medicine, Kingston, Ont., 1906; aged 43; died, May 21, at St. Paul's Hospital, Saskatoon, of meningitis.

Joseph Ambrose Higgins ⊕ South Manchester, Conn.; College of Physicians and Surgeons, Baltimore, 1907; served during the World War; aged 43; died, May 24, of heart disease.

Joshua B. Vought, Santa Rosa, Calif.; Homeopathic Medical College of Missouri, St. Louis, 1884; formerly a practitioner in Iowa; aged 76; died, May 10, following a long illness.

John Franklin Campbell ⊕ Massillon, Ohio; University of Western Ontario Medical School, Toronto, Ont., Canada, 1899; aged 52; died, June 5, of a self-inflicted bullet wound.

Robert E. Graul ⊕ St. Louis; St. Louis College of Physicians and Surgeons, 1895; on the staff of the Lutheran Hospital, where he died, May 29, following a long illness, aged 56.

Jeremiah Christopher Anthony, Springfield, Mass.; Jefferson Medical College of Philadelphia, 1891; aged 60; died, March 29, of bronchopneumonia and chronic endocarditis.

Thomas W. Blakey, Auburn, Ky.; Jefferson Medical College of Philadelphia, 1882; aged 67; died, June 14, at St. Francis Hospital, San Francisco, of aortic insufficiency.

John A. Kimbrough ⊕ Thomasville, Ala.; Louisville (Ky.) Medical College, 1898; formerly county health officer; aged 54; died, June 7, of endocarditis and septicemia.

Gilbert Totten McMaster, New York; Jefferson Medical College of Philadelphia, 1898; aged 52; died, June 9, at the Bellevue Hospital, of cerebral hemorrhage.

Clarence James Willard, Wauzeka, Wis.; University of Illinois College of Medicine, Chicago, 1909; aged 42; died suddenly, May 17, of heart disease.

George Franklin Hilton ⊕ St. Augustine, Ill.; College of Physicians and Surgeons, Keokuk, 1879; aged 70; died, June 3, following a long illness.

Thomas Barker Williams, Ridgeway, N. C.; University of Maryland School of Medicine, Baltimore, 1877; aged 71; died, May 3, following a long illness.

Cornelius Skinner, Louisville, Ky.; University of Virginia Department of Medicine, Charlottesville, 1882; aged 65; died, June 16, of heart disease.

Lorenzo G. Hill, Mulberry, Ark.; University of Tennessee College of Medicine, Memphis, 1892; aged 64; died, May 17, of cerebral hemorrhage.

A. Robert Able, St. Matthews, S. C.; University of Georgia Medical Department, Augusta, 1880; aged 76; died, May 14, of cardiorenal disease.

William D. Huff ⊕ Santa Rita, N. M.; University Medical College of Kansas City, Mo., 1900; aged 50; died, May 30, of pneumonia.

Jesse F. Cleveland, Spartanburg, S. C.; Jefferson Medical College of Philadelphia, 1869; Civil War veteran; aged 79; died, May 1.

George Duncan Allen, Portland, Mich.; Cleveland University of Medicine and Surgery, 1866; aged 87; died, May 27, of senility.

Wilbur C. Heskett, Hammond, Ind.; Kentucky School of Medicine, Louisville, 1885; aged 67; died, June 14, of heart disease.

John White Geary, Burns, Ore.; Willamette University Medical Department, Salem, 1883; aged 75; died, May 20, of uremia.

James F. West, Brookville, Ind.; Kentucky School of Medicine, Louisville, 1891; aged 69; died, May 6, following a long illness.

Carl Frischkorn, Oak Park, Ill.; Hahnemann Medical College and Hospital, Chicago, 1891; aged 80; died, May 1.

Silas R. Wilcox, Bennington, Vt.; Metropolitan Medical College, New York, 1864; aged 86; died, May 19.

James P. Carpenter, Ithaca, Mich.; Detroit Medical College, 1884; aged 80, died, May 20, of prostatitis.

Henry G. Allan, Louisville, Ky.; Kentucky School of Medicine, Louisville, 1853; aged 95; died, May 20.

George Hare, Kirkland, Texas; American Medical College, St. Louis, 1883; aged 86; died, May 13.

The Propaganda for Reform

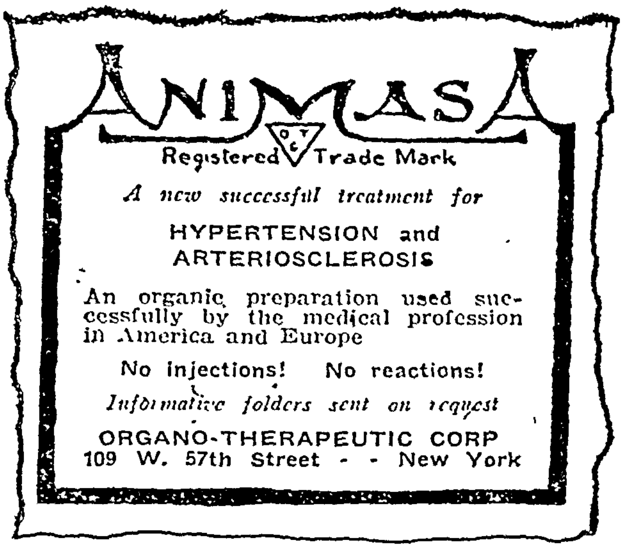
In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

ANIMASA NOT ACCEPTABLE FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report. W. A. Puckner, Secretary.

Animasa, according to the Organo-Therapeutic Corporation, New York, "is a preparation obtained from intima and media of arteries of young and sound fat cattle, foetal extract, by-products of erythrocytes and serum." It is said to be put up "in the form of a pellet, which is sugar coated and is administered by mouth. Each pellet contains 0.03 Gm. of the efficacious substance." No information is furnished in regard to the method by which the preparation is obtained, or the proportion of the several declared ingredients; nor are any data submitted to show that the uniformity of the mixture is controlled in any way. Animasa is stated to be manufactured by the Organotherapeutische Werke, G. m. b. H., Osnabruck, Germany.



ANIMASA
Registered Trade Mark
A new successful treatment for
HYPERTENSION and
ARTERIOSCLEROSIS
An organic preparation used successfully by the medical profession in America and Europe
No Injections! No reactions!
Informative folders sent on request
ORGANO-THERAPEUTIC CORP
109 W. 57th Street - - New York

According to the Organo-Therapeutic Corporation, Animasa presents "The new method of treating hypertonus and arteriosclerosis." In the firm's advertising it is claimed that Animasa "activates protoplasm generally and produces a specific focal reaction. . . ." "Secondly, it desensitizes foreign products of protein decomposition found in the sera of patients suffering from hypertonus and arteriosclerosis. . . ." It is further stated that:

> "Animasa, because of its composition has the following properties: 1. *Desensitization* because of the special reduced products of protein decomposition (Eiweiss abbauproducte) present in Animasa, which has been shown conclusively that they will desensitize the foreign products of protein decomposition (Eiweiss abbaustoffe) found in the blood of patients suffering from Hypertonus and Arteriosclerosis. 2. *Blood pressure reducing.* 3. *Organotropic*—beneficial effect on the arterial walls because of the extract of intima and media."

The following are two of the anonymous testimonials included in the advertising for Animasa:

> "For the last several months I have been using Animasa on patients suffering from hypertonus and arteriosclerosis with successful results in each instance. S. E. W., M.D., New York, N. Y."
>
> "I have tried Animasa frequently and it always produced what it is claimed for it, i. e., a reduction of blood pressure and a disappearance of subjective symptoms. A. H. S., M.D., New York, N. Y."

A review of a number of reprints of reports on Animasa, submitted by the distributor, shows:

Griesbach (Giessen) (*München. med. Wchnschr.* **69**:1696, 1922). Animasa lowers blood pressure in both normal and pathologic conditions in man and in horses and dogs. In some cases in man, blood pressure fell after the use of Animasa, but rose soon after discontinuing it. In one patient the pressure fell from 210 mm. of mercury to 156 mm.—after Animasa, and soon after the patient became uremic and died.

Blumenfeldt and Cohn (*Med. Klin.* **20**:1320, 1924) used Animasa in twenty-seven cases. In twenty-two, there was subjective improvement and in fourteen objective and subjective improvement; of fourteen patients with a blood pressure below 200, in ten the blood pressure was lowered after Animasa, and in four it was not lowered. Of ten cases with blood pressure over 200, one showed a lower blood pressure and nine did not. Other reports are more enthusiastic and less critical.

It is well known that various tissue extracts and preparations will produce a lowering of blood pressure. In most of the normal cases cited in connection with the administration of Animasa, there was depression of blood pressure of a few millimeters only. In the case reports no consideration is given to the unfavorable results of lowering the blood pressure in patients with damaged kidneys.

The Council finds Animasa unacceptable for New and Nonofficial Remedies because it is a preparation of indefinite composition; because no evidence is submitted to show that its composition and uniformity are controlled; and because it is marketed with unwarranted therapeutic claims.

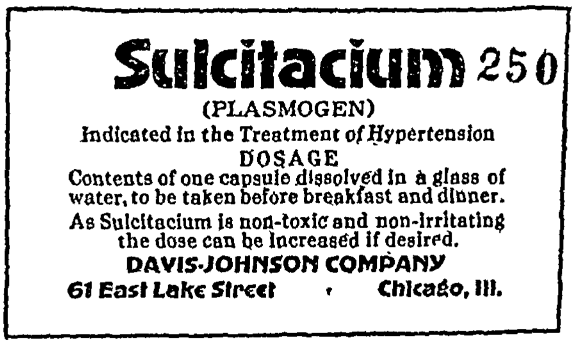
SULCITACIUM NOT ACCEPTABLE FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report. W. A. Puckner, Secretary.

"Sulcitacium" is the name applied by the Davis-Johnson Company, Chicago, to capsules proposed for the treatment of hypertension. The advertising which the Davis-Johnson Company sends out contains no definite statement of the composition of Sulcitacium; it is declared to be "a combination of the soluble mineral salts found in the normal blood plasma."

Sulcitacium is stated to be "a remineralizing food, rather than a medicinal preparation" and that it must be given for at least three weeks to obtain results. The promoters assert that Sulcitacium "is giving unusual results *which persist.*" The following is offered as the "rationale of therapy":



Sulcitacium 250
(PLASMOGEN)
Indicated in the Treatment of Hypertension
DOSAGE
Contents of one capsule dissolved in a glass of water, to be taken before breakfast and dinner.
As Sulcitacium is non-toxic and non-irritating the dose can be increased if desired.
DAVIS-JOHNSON COMPANY
61 East Lake Street , Chicago, Ill.

> "It has been suggested that the underlying cause of such conditions [hypertension] is a deficiency in the normal mineral content of the blood plasma."
>
> "The argument is that the blood toxins and the blood minerals form soluble compounds that may be thrown off through the kidneys."

As evidence for the effectiveness of treatment with Sulcitacium case reports by a physician are offered. There appears to be no support either in physiology or in internal medicine for the claim that administration of any quantity of inorganic salts normal for the blood will control acute essential hypertension. We cannot materially or consistently raise the inorganic salts of the blood by administering, at least in moderate doses, those salts by mouth provided the kidneys are normal. Secondly, lowering the salts of the blood experimentally does not produce hypertension. Thirdly, there appears to be no evidence of essential decrease of any of the inorganic salts of the blood in essential hypertension. It would be interesting to learn why it is necessary to administer the preparation for three to four weeks or even up to four months before effects are produced, in view of the fact that ordinarily the inorganic salts normal to the blood are quickly absorbed from the intestinal tract.

Seven cases are cited in which there was recorded a reduction in blood pressure following the use of Sulcitacium. The records do not state whether other treatment, such as modification of the diet or regulation of the bowels, was given at the same time or continued after Sulcitacium was stopped. The observations are too few in number and not sufficiently detailed to allow of the conclusion that the use of the remedy caused the continued lowering of blood pressure.

Sulcitacium is unacceptable for New and Nonofficial Remedies because its composition is not declared and because the therapeutic claims advanced for it are not supported by acceptable clinical evidence.

Correspondence

POSTGRADUATE STUDY IN EUROPE

To the Editor:—The difficulty that I experienced recently before going abroad in obtaining information regarding certain aspects of postgraduate work in Europe makes me think that a few words may help avoid wasteful lessons.

Regarding actual traveling aspects, one's financial ability is the guiding factor and controlling influence.

What is the best time for getting an opportunity to work? There is a particular seasonal advantage, no matter what the study or specialty may be. That period covers the time when most of the university professors are teaching—from September to July. During July and August, because of the vacation season, the curricular schedule is irregular, and much time is lost waiting for courses to begin.

The work that I was particularly interested in was gynecology and obstetrics, and the following applies to these specialties.

Registration with the American Medical Association of Vienna is more or less advantageous. The best guide in the choice of courses is the "orientation man," who is a member of the association and is supposed to be, and usually is, quite well informed about courses in the specialties for which he is acting as orientation man. Even with this arrangement as an aid, one can expect to waste a few weeks before navigating on his own initiative without this voluntary pilot's assistance. The job of orientation man has now been passed to a resident physician and member of the association in whom the duties of the orientation man are vested. It is his business to arrange and post on a bulletin board courses for all the specialties. Besides the aid obtained in arranging courses according to the method of procedure as described, other benefits are derived, such as reduction in group course fees and the use of the library. Membership in the American Medical Association abroad is not obligatory for procuring work. However, to a stranger, the organization and all it stands for helps materially. There are, however, priority rules governing allotment of courses to members entitled to such priority, by virtue of their longer residence in Vienna; but those may be avoided by arranging for private individual courses. Arbitrary as the priority rule may seem, there are nevertheless distinct advantages gained by this arrangement. The American Medical Association with its group course plan acts as a buffer against increased tuition fees, to which otherwise there would be no limit. To cite a particular example wherein fees might be raised, as in the cadaver operative courses when the demand for cadavers far exceeds the supply, the American Medical Association acts as a curb. Yet for the man who finds that the priority rule upsets his schedule and who loses hope of ever dovetailing his courses without a resultant loss of time and money while awaiting his turn, the private courses are a great boon even though the initial expense is greater. The satisfaction derived from time saved in this way cannot entirely be disregarded. Men who come over to take a "Cook's Tour" through European clinics for postgraduate study do not come under this category.

Outstanding features in gynecology and obstetrics are the anatomy, pathology and cadaver operative courses. For 350,000 kronen, equivalent at present to $5 in American currency, a pelvis can be obtained at the Anatomic Institute. The pelvis can be kept for as long a time as is necessary to complete the dissection. Consequently, several such pelvises can so be dissected. To complete this work, a course in topographical anatomy of the abdomen and pelvis can be taken with the docent of the Anatomic Institute. He leaves nothing to the imagination.

Didactic obstetric and gynecologic pathology and endocrinology are given at the First Frauenklinik.

Cadaver operative work can be taken with several of the docents affiliated with the First Frauenklinik and the Second Frauenklinik. The men giving these courses are excellent operators and well versed in anatomy. Their instruction is thorough, and their methods are never pedantic. Cadaver operative courses can also be obtained in some of the outlying hospitals.

Touch courses in gynecology and obstetrics are given at the clinics named. The manikin courses in obstetrics are excellent.

Operative work on the living in gynecology or obstetrics cannot be had in Vienna, but much can be learned by visiting the different operators and observing and questioning the rationale of their methods.

Didactic courses in gynecologic operative technic, roentgen-ray and radium therapy, diseases of the new-born, dermatology, with especial emphasis on the commoner skin diseases of the female external genitalia, and combined lecture and practical courses in cystoscopy and ureteral catheterization, proctoscopy, physiotherapy and electrotherapy particularly stress all points that relate to gynecology. Other courses to suit the individual needs can be arranged either at the university clinics or at the clinics of outlying hospitals.

So much for Vienna and about Vienna. The work is perhaps better organized there for American physicians than anywhere else in Europe. Most of the courses can be taken in English, but the greatest benefit in studying in Austria or Germany is derived by those who speak or understand German.

Budapest is about five hours by train or about two hours by air from Vienna. The headquarters of the American Medical Association of Budapest are at the Hotel St. Gellért. Before coming to Budapest, it is imperative that advance arrangement for work be made. It depends entirely on the number of American physicians in Budapest seeking operative work as to the amount of work that is going to be available. If one is fortunate enough to strike it off season, one will be kept very busy operating on the living almost every morning of the week. Otherwise time is wasted in waiting for one's turn. It is also advisable to find out how many men are signed up with the man that one plans to work with during a certain time. Rules and restrictions of the American Medical Association are supposed to govern this phase of the work, yet the rules are not always lived up to by the operators, and more men are frequently signed up than there is work for, thus resulting in serious loss of time.

Each man is taken on as assistant until he proves his mettle; then operative work is turned over to him under constant supervision.

Operative work can be arranged for by paying per month or per operation. The latter method is the preferable one because one pays for what one gets.

More and more of an effort is being made to organize better the postgraduate work in Budapest. In this direction the combined efforts of the Hungarian Medical Postgraduate Committee and those of the American Medical Association of Budapest are concentrated.

Recently during my incumbency in office as president of the American Medical Association of Budapest, Dr. Joseph Baló, secretary of the Hungarian Medical Postgraduate Committee, was elected honorary member of the executive committee of the association and is now virtually acting as resident member of the association, endeavoring actively to promote postgraduate studies of English-speaking physicians in Hungary.

The ideal plan is to get through with such studies as one plans to take in Vienna and then come on to Budapest to complete the courses that for various reasons cannot be obtained in Vienna.

Certificates for work done both in Vienna and in Budapest are issued only to members of the American Medical Association of Vienna and Budapest.

In Berlin, studies for American physicians are not organized. In Paris and London, organization is becoming more apparent.

The official blue book of the American Medical Association of Vienna may be obtained by writing to the association addressed to Vienna; likewise, the official yellow book of the American Medical Association of Budapest by writing to Dr. Joseph Baló, Maria-Utca-39, Budapest, Hungary.

Herman F. Strongin, M.D.,
239 West Seventy-Fifth Street,
New York.

President ex-officio, American Medical
Association of Budapest.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SMALLPOX AND VACCINIA

To the Editor:—I have always had the impression that, in case of exposure of nonprotected persons to smallpox and vaccination following exposure, either smallpox or vaccination might ensue, but not both. In three recent cases, persons vaccinated and the vaccination being successful, about the stage of vaccine pustule there has been a typical discrete smallpox eruption, with the usual stages, and not more marked near the vaccination than elsewhere. These cases were considered as vaccinia and the patients were not quarantined, but in two instances nonvaccinated members of their families developed a typical discrete smallpox, which raised the question of the so-called vaccinia being the source of contagion. Is the first proposition correct? Please omit my name.

M.D., Iowa.

Answer.—If smallpox infection takes place shortly before vaccination, both smallpox and vaccinia may develop. The time relationship between the two infections may be such that the infection with the smallpox virus, so to speak, is not overtaken by the immune reaction produced by vaccination. In the cases cited, the smallpox in the nonvaccinated members of the families in question resulted from smallpox contagion and not from vaccinia. The patients with vaccinia and smallpox should have been quarantined like any other smallpox patient.

L'OREAL HENNÉ

To the Editor:—Does L'Oreal Henné contain any injurious ingredients? This request has come from a patient of mine who read the extremely illuminating article on hair dyes in *Hygeia* for May, 1926.

M.D., New York.

Answer.—A package of L'Oreal Henné (F. L. Lebeau, Inc., New York City) was submitted to the A. M. A. Chemical Laboratory in June, 1925. The chemists reported that the preparation consists of two packages, one containing a white powder and the other a yellow substance. The white powder responded to tests for sodium perborate; the yellow substance was apparently composed of iron and copper salts, with pyrogallol and vegetable matter.

TREATMENT OF MALARIA

To the Editor:—Please inform me as to the latest method of treating estivo-autumnal malaria, which has persisted in this particular patient for a period of five years, during which time she has been treated extensively with quinine. In the last two years she has developed an idiosyncrasy to this drug, and it is impossible to use it further in amounts sufficient even to control her symptoms of malaria. Is arsphenamine or neoarsphenamine indicated for this type of infection? Can this disease be transmitted to a fetus in utero and, if so, what treatment should be instituted both before and after birth?

John R. Brayton, M.D., Indianapolis.

Answer.—The arsphenamines are useful only in the tertian form of malaria. Probably the best succedaneum for quinine in estivo-autumnal malaria, though far inferior to it, is methylene blue, in doses of from 0.1 to 0.2 Gm. every three hours, a total of from 0.5 to 1 Gm. daily.

That malaria may be transmitted to the fetus in utero is shown by a case in Colorado reported by Forbes (*Am. J. Dis. Child.* **25**:130 [Feb.] 1923), in which anopheles transmission could be positively excluded. In this case, the babe, aged 10 weeks, was given quinine hydrochloride, 0.12 Gm., every four hours for four days, then three times daily for four days, and then three times on each of two days of each week for two months, with a perfectly satisfactory result.

ROENTGEN-RAY THERAPY

To the Editor:—With a 7 inch spark gap, 5 milliamperes, what time would produce an erythema of skin at a 20 inch distance; also at 10 inch distance? With 1 mm. of aluminum as filter?

T. A. McAmis, M.D., Lawrenceburg, Tenn.

Answer.—Under the conditions mentioned in the first part of the query, with a standardized apparatus, the time required will be approximately five minutes. With a 10 inch target distance it will be about one minute and fifteen seconds.

ANALGESICS — PHENOL ABSORPTION — WITHDRAWAL SYMPTOMS OF DRUG ADDICTION

To the Editor:—1. Please name some pain killers besides morphine (I mean good ones used in neuritis or severe pains). Give dosages. 2. Is phenol absorbed by an unbroken skin? 3. How does a morphine fiend act when he is deprived of the drug? Does he have pain or pains? How can it be differentiated from hysteria? Do not use name.

M.D., Pennsylvania.

Answer.—1. Amidopyrine is probably one of the most efficient representatives of the group of coal tar analgesics. It has been stated that the addition of a general nerve sedative like phenobarbital in proportion of perhaps 1:10 of amidopyrine increases the analgesic power of the latter. Extract of hyoscyamus in 0.01 to 0.02 Gm. doses also has analgesic potency, most especially in colics.

2. Phenol (carbolic acid) is absorbed by the unbroken skin, but hardly ever to a sufficient extent to produce any injury unless the application is very extensive. Phenol solution applied on a finger under an occlusive dressing is capable of penetrating to such a degree as to produce necrosis.

3. The withdrawal symptoms in morphinism are as variable as those of hysteria. The patient suffers from absolute insomnia, nervous irritability and excitement, almost delirium, which may be succeeded by depression simulating melancholia. He may show muscular tremor, his heart action may become feeble and irregular, and he may even go into collapse. There is great impairment of digestion, with loss of appetite, nausea, even vomiting, constipation or diarrhea. Such a patient may have pain either from the original ailment that caused the use of the morphine or from impairment of various functions produced by morphine; or he may simulate pain in order to obtain the morphine he craves. It may be noted that while the hysterical patient usually craves sympathy and revels in medical attention, the morphine addict is prone to ridicule the idea of consulting a physician and may stoutly assert that there is nothing wrong with him. He may resist examination, most especially exposure of the part of the body that bears the telltale marks of the frequent use of the hypodermic syringe. The supreme and pathognomonic test is absolute and complete seclusion of the patient in charge of a trained attendant so as to make it impossible to secure morphine. Then, within a short time, the patient will confess the truth and beg for morphine.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 13-16 Sec, Dr S W. Welch, Montgomery

CALIFORNIA San Francisco, July 12-15 Sec, Dr. Charles B Pinkham, 906 Forum Bldg, Sacramento

CONNECTICUT Hartford Reg Bd, July 13-14 Sec, Dr Robert L Rowley, 79 Elm St, Hartford Homeo Bd, New Haven, July 13 Sec, Dr. Edwin C M Hall, 82 Grand Ave, New Haven

DISTRICT OF COLUMBIA Washington, July 13 Sec, Dr. Edgar P. Copeland, Suite 110, 1801 Eye St, N W, Washington

HAWAII: Honolulu, July 12-15 Sec Dr. A L Davis, 1254 Emma Street, Honolulu

INDIANA Indianapolis, July 13-15. Sec, Dr Wm T Gott, 421 State House, Indianapolis

MASSACHUSETTS: Boston July 13-15 Sec, Dr. Frank M Vaughan, Room 144, State House, Boston

SOUTH DAKOTA Custer, July 20 Director, Med Lic, Dr H R Kenaston, Bonesteel

Colorado April Examination

Dr. David A. Strickler, secretary of the Colorado Board of Medical Examiners, reports the written examination held at Denver, April 6, 1926 The examination covered 8 subjects and included 80 questions An average of 75 per cent was required to pass. Of the 15 candidates who took the physicians and surgeons' examination, 6 passed and 9, including 2 osteopaths, failed Eleven candidates were licensed by reciprocity The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Chicago Medical School		(1924)	80.4
Kansas City College of Medicine and Surgery		(1924)	75
St Louis College of Phys and Surgs		(1923) 76.2, (1925)	82.1
University of West Tennessee Coll of Med and Surg		(1921)	76.1
Laval University Faculty of Medicine		(1919)	86.3

College	FAILED	Year Grad	Per Cent
St Louis College of Physicians and Surgeons (1923) 64.4, 64.6 (1924) 59.8, (1925) 54.6		(1920)	57.1
Medico-Chirurgical University of Lund, Sweden.		(1883)*	21
University of Kharkov, Russia		(1916)*	65.6
Osteopaths		...	50.8, 56.7

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Emory University School of Medicine		(1925)	Georgia
Northwestern University Medical School		(1922)	Missouri
Rush Medical College		(1924)	Illinois
Indiana University School of Medicine		(1924)	Indiana
University of Maryland School of Medicine (1917) Maryland		(1912)	Dist Colum
Creighton University Medical College		(1924, 2)	Nebraska
Long Island College Hospital.		(1913)	New York
Temple University Department of Medicine		(1922)	Maryland
German University of Prague		(1921)*	New York

* Verification of graduation in process

Oklahoma March Examination

Dr. J. M. Byrum, secretary of the Oklahoma Board of Medical Examiners, reports the written examination held at Oklahoma City, March 9-10, 1926 The examination covered 12 subjects and included 120 questions An average of 75 per cent was required to pass Three candidates were examined, all of whom passed Three candidates, including 1 undergraduate, were licensed by reregistration and 12 by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Northwestern University Medical School		(1925)	91
University of Maryland School of Medicine		(1925)	89
University of Oklahoma School of Medicine		(1925)	89

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas Medical Department		(1918)	Arkansas
Rush Medical College		(1889)	Iowa
University of Illinois College of Medicine		(1924)	Illinois
University of Kansas School of Medicine		(1915)	Kansas
Kentucky School of Medicine		(1890)	Texas
University of Nebraska College of Medicine		(1919)	Nebraska
University of Oklahoma School of Medicine		(1924)	Texas
University of Nashville Medical Department		(1892)	Texas
University of the South Medical Department		(1901)	Mississippi
Vanderbilt University School of Medicine		(1924)	Tennessee
Medical Department, Texas Christian University		(1911)	Texas
University of Texas Department of Medicine		(1910)	Texas

Book Notices

A HANDBOOK FOR SENIOR NURSES AND MIDWIVES. By J K. Watson, M D, Capt, R A M C Cloth Price, $4. Pp 554, with 178 illustrations New York Oxford University Press, 1926

This voluminous, closely printed book is a supplement to the author's "Handbook for Nurses" and his "Handbook of Midwifery." It is largely a compendium of the experience of others, and the great majority of the 178 illustrations are borrowed from the writings of others. The book is divided into four sections; namely, medicine, surgery, pediatrics, and obstetrics and gynecology. However, these divisions are unequal, as evidenced by the fact that only seventy pages are devoted to medicine, 120 pages to pediatrics, ninety-three pages to obstetrics and gynecology, and 252 pages to surgery. Furthermore, the section on medicine is limited to prevention of disease, cancer, alcohol, ductless glands, constipation and intestinal toxemia, diabetes mellitus, smallpox and vaccination, epidemic encephalitis and intracranial tumors The common diseases are not considered. The author uses the terms "tubercular" and "tuberculous" interchangeably, though the adjective usually required was "tuberculous" Another misuse of terminology is the expression "chronic endometritis" which the author considers in its obsolete sense Pathologists now agree that chronic endometritis is seldom found except in association with retained secundines, cancer of the uterus or tuberculosis of the uterus For anesthesia in obstetrics, chloroform is the author's choice, and for analgesia, morphine and scopolamine seem to find favor. In the illustrations of internal version borrowed from Nagel, the vulvar hairs are neither clipped nor shaved, the operator's hands are ungloved, and there is an utter disregard for aseptic precautions. These details are important, especially for teaching purposes Three of the four version illustrations show the patient lying on her side In this country delivery is practically always accomplished with the patient in the dorsal position This book undoubtedly contains a wealth of useful information and is well written; but it is more valuable for students and practitioners than for nurses It is too elaborate for nurses, even for senior nurses The section for midwives is much more practical

DER KOKAINISMUS. Geschichte, Pathologie, medizinische und behördliche Bekampfung Von Prof. Dr. Hans W Maier, I Oberarzt der psychiatrischen Universitatsklinik, Burghölzli-Zürich Paper Price, 15 marks Pp 269, with 22 illustrations Leipsic Georg Thieme, 1926

This is essentially a treatise on the psychiatry of cocainism. The author discusses in considerable detail the various types of hallucinations, special symptoms, differential diagnosis, prognosis, therapeutics and governmental control The hallucinations of cocainism are frequently of such a type as to lead to acts of violence: robbery, sexual crimes and, less frequently, homicide Abstinence symptoms are not at all serious so far as the health of the cocainist is concerned, but the mental state is such that cures are difficult to obtain, usually requiring prolonged incarceration The combination of morphinism with cocainism appears to be still more serious in that the mental decadence occurs more quickly, leading within a few months to delirium requiring hospitalization. The volume contains a rather more exhaustive study of the psychosis than the monograph by Joel and Frankel It appears to be sound and well worth the time of those interested in this field.

HYSTERIA By Ernst Kretschmer, M D, A O, Professor of Neurology and Psychiatry in Tubingen Translated by Oswald H Boltz, M D, Senior Assistant Physician in the Manhattan State Hospital in New York City Nervous and Mental Disease Monograph Series, No 44 Pp 120. New York Nervous & Mental Disease Publishing Company, 1926.

This monograph is not a clinical treatise on the symptoms and diagnosis of hysteria but a study of the dynamics of the hysterical reaction from a psychologic and neurophysiologic aspect. The author attempts, with admirable lucidity and simplicity, not merely to interpret the symbolism of the symptoms but rather to establish how they come about; to show how a tremor, an anesthesia or a paralyzed limb can arise and be maintained on the basis of some emotional conflict.

The material studied is chiefly that of the war hysterias, but the arguments adduced serve equally for those of civil life. The explanations offered are based on a study of reflexes, their conditioning and the influence on them of conscious or volitional innervation. The hysterical reactions are more primitive, or "childish," than those of conscious selection, and are "release" manifestations brought about by paralysis of higher mechanisms through the shock of emotional experience; they become fixed as habits or conditioned reflexes, and consequently become progressively more automatic and involuntary. The book is thoroughly worth while, the arguments are well documented and illustrated, and the method of study will do much to bring about the reunion of psychodynamics and nervous physiology in harmony with the "evolution and dissolution" principles of Hughlings Jackson. The translation is somewhat literal in places, the translator rightly adhering to the need to retain the exact meaning of the author; but it is readable and can safely be recommended to any student of neurology.

Modern Medicine. Its Theory and Practice in Original Contributions by American and Foreign Authors. Edited by Sir William Osler, Bart., M.D., F.R.S. Third edition. Reedited by Thomas McCrae, M.D., Professor of Medicine in the Jefferson Medical College, Philadelphia. Assisted by Elmer H. Funk, M.D., Assistant Professor of Medicine, Jefferson Medical College, Philadelphia. Volume II. Diseases of Doubtful Etiology; Diseases Caused by Protozoa, Spirochetes and Animal Parasites; Diseases Due to Physical, Chemical and Organic Agents; Deficiency Diseases. Cloth. Price, $9. Pp. 891, with illustrations. Volume III. Diseases of Metabolism—Diseases of the Digestive System. Cloth. Price, $9. Pp. 1052, with illustrations. Philadelphia: Lea & Febiger, 1926.

The third edition of a work as important as this scarcely needs a reviewer's estimate. Volume II is in seven parts, as follows: (1) diseases of doubtful or unknown etiology, including such affections as smallpox, measles, dengue and rheumatic fever; (2) protozoan infections; (3) spirochetal infections; (4) diseases caused by animal parasites; (5) diseases due to physical agents; (6) diseases due to chemical and organic agents, and (7) deficiency diseases. In this volume, it is interesting that chapter XV, on syphilis, still bears the authorship of Osler, although it has been considerably revised by other eminent men. Parts 5 and 6, covering diseases caused by physical and by chemical or organic agents, respectively, are in large part contributions to the increasingly important field of industrial medicine. Volume III has but two parts; namely, diseases of metabolism and diseases of the digestive system. In planning a large work of this character, the separation of diseases of metabolism from diseases of the endocrines and the deficiency diseases cannot be a simple task. In this instance, the diseases of metabolism comprise only four chapters, respectively on metabolism from the point of view of the practitioner, on diabetes, on gout and on obesity. The contributors to these volumes are well known authors from both England and North America, and their various articles are marked by thoroughness rather than by brevity, in accordance with the purpose of the work as a whole. Volume I was reviewed last week.

Experimental Investigations into the Emotional Life of the Child Compared with that of the Adult. By Helga Eng. Translated by George H. Morrison, M.B. Cloth. Price, $6.50. Pp. 243, with illustrations. New York: Oxford University Press, 1925.

The author has utilized the laboratory method to study the emotional life of the child between the ages of 7 and 14. Thus, curves made with all the technic of modern scientific physiology indicate that the thought of castor oil is sufficient to produce displeasure and a fall in the pulse height and blood pressure. A study of the intellectual emotions indicates that children take most pleasure in history among their school interests after manual training, and that they vary in their response to music. The author is inclined to classify all emotions into four types—pleasure and displeasure, tension and excitement. Pleasure is accompanied by more rapid breathing; displeasure, by retarded respiration. Tension brings about slower breathing, while excitement is accompanied by a more rapid pulse, more rapid breathing, and an increase in arm volume and pulse rate. The author found nothing in her experiments to indicate a state of relaxation in the child.

Meister der Heilkunde. Herausgegeben von Prof. Dr. Max Neuburger. Band 7. Max Pettenkofer. Von Dr. Otto Neustätter, Ehemaliger Direktor des Historisch-Ethnologischen Hygiene-Museums in Dresden. Boards. Price, 3.60 goldmarks. Pp. 93, with 1 illustration. Vienna: Julius Springer, 1925.

This is another contribution to a series of brief biographies of German masters of medicine, the previous numbers including lives of Virchow, Ehrlich, DuBois-Reymond, Billroth, Koch and Skoda. The biography of Pettenkofer represents a life large in contribution to medicine and to letters, beginning with a sonnet written in 1844 on modern chemistry, and following with numerous works in chemistry, physiology, hygiene and epidemiology. As early as 1865, Pettenkofer began contributing essays for the instruction of the public in hygiene, and continued this interesting aspect of his work until the end. It is well for the students of the present to have recorded the inspiring lives of the great scientists of the past.

An Introduction to the Study of X-Rays and Radium. By Hector A. Colwell, M.B., D.P.H., Director of the Radiological Department, King's College Hospital, and Cecil P. G. Wakeley, F.R.C.S., F.R.S., Assistant Surgeon, King's College Hospital. Cloth. Price, $3.35. Pp. 203, with 37 illustrations. New York: Oxford University Press, 1926.

The authors have attempted to supply an elementary textbook on roentgenology and radioactivity, and have succeeded in presenting much established knowledge and maintaining due conservatism as to therapeutic possibilities. All the apparatus used in this work is illustrated and described. A special department discusses units of measurement and official reports on plans for the protection of patient and operator. The book is a useful work, particularly for the beginner in this field.

Das Sputum. Von Professor Dr. Heinrich von Hoesslin. Second edition. Paper. Price, 66 marks. Pp. 485, with 130 illustrations. Berlin: Julius Springer, 1926.

The first edition of this book appeared in 1920. The new edition is enlarged and revised, especially in the part on bacteriology of the sputum. The book gives a thorough consideration of the sputum from all points of view and may be accepted as a reliable source of information in its chosen field. The bibliography, which occupies no less than fifty pages, seems to cover the field of the sputum quite completely.

Correcting Speech Defects and Foreign Accent. By Grace A. McCullough, Supervisor of Speech Improvement in the New York City Schools, and Agnes V. Birmingham, in charge of Speech Improvement in the New York City Schools. Cloth. Price, 88 cents. Pp. 232, with illustrations. New York: Charles Scribner's Sons, 1925.

The authors are teachers in the speech improvement department of the New York schools. Their work is therefore not encumbered by theoretical conceptions. Numerous practice sentences and poems are provided for the use of teachers in other institutions. Here are all the trick tongue twisters that have given amusement and exercise to the lingual appendages since men first learned the value of such performances.

La Salpêtrière. Par Georges Guillain et P. Mathieu. Paper. Price, 100 francs. Pp. 88, with illustrations. Paris: Masson et Cie, 1925.

In recognition of the centenary of the birth of the great Charcot, the French publishers have prepared a history of the famous Salpêtrière, which has had an important place in French medical annals since the sixteenth century. The work is beautifully illustrated with photogravures of the institution and the notable scientists associated with it. A charming contribution on the whole to medical history and that of the hospital!

Prescription Notes. By Arthur L. Tatum. Leather. Price, $1.25. Pp. 22. Chicago: University of Chicago Press, 1925.

Medical students appreciate outlines of prescription writing with simple rules and a pocket-size book in which to record the favorite compounds of favorite instructors. These are supplied in the manual by Dr. Tatum. He limits himself wholly to the metric method, which is excellent, but which physicians, particularly instructors in clinical departments, persist in avoiding.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender Selections will be made for more extensive review in the interests of our readers and as space permits

A Health Education Procedure: For the Grades and Grade Teachers By Kathleen Wilkinson Wootten (Mrs Henry Stewart Wootten), Professor of Health, Georgia State College for Women, Milledgeville, Ga Cloth Pp 420, with illustrations. New York National Tuberculosis Association, 1926

An outline for health education in schools, based on experience and study

Pediatrics By Various Authors. Edited by Isaac A Abt, Professor of Diseases of Children, Northwestern University Medical School, Chicago Volume VIII and Index Volume Cloth Price, $10 Index volume gratis Pp 1102, with 388 illustrations. Philadelphia W B Saunders Company, 1926

Concluding volume and index of this great system of pediatrics.

Parenthood and the Newer Psychology Being the Application of Old Principles in a New Guise to the Problems of Parents with Their Children By Frank Howard Richardson, A B, M D Cloth Price, $1 75. Pp 200 New York G P Putnam's Sons, 1926

A pediatrician's conception of child training—interesting if not altogether orthodox

The Hygiene of the Home, and Responsibility for Sex Education By John J Mullowney, President of Meharry Medical College Cloth Price, $2 net Pp 195 Boston The Christopher Publishing House, 1926

A handbook of common sense advice rather uninspiring in its presentation.

Herzkrankheiten bei Frauen Von Prof Dr N Jagic Paper Price, 3 60 marks Pp 103 Berlin. Urban & Schwarzenberg, 1926

Brief monograph on technic of study, diagnosis and therapeutics of heart disease in women

Neue klinische Gesichtspunkte zur Lehre vom Asthma cardiale Von Dr Sigmund Wassermann Paper Price, 9 60 marks Pp 168, with 12 illustrations Berlin Urban & Schwarzenberg, 1926

Concerning coronary thrombosis and aortic valve stenosis particularly

Handbuch der biologischen Arbeitsmethoden Herausgegeben von Geh Med. Rat Prof. Dr Emil Abderhalden, Direktor des physiologischen Institutes der Universitat Halle a d Saale Lieferung 195 Abt V. Methoden zum Studium der Funktionen der einzelnen Organe des tierischen Organismus, Teil 3B, Heft 3—Methoden zum Nachweis des Adrenalins Von Ernst Gellhorn Methoden zum Nachweis der Wirkung von Schilddrusenstoffen Von Isaac Abelin Die Auswertung der Hypophysenhinterlappenauszüge am augeschnittenen Uterus Von Paul Trendelenburg Spezielle operative Methoden zur Untersuchung der inneren Sekretion der Geschlechtsdrüsen bei Wirbeltieren Von Alexander Lipschütz Paper Price, 11 10 marks Pp 285 496, with 76 illustrations Berlin Urban & Schwarzenberg, 1926

Handbuch der biologischen Arbeitsmethoden Herausgegeben von Geh Med Rat Prof Dr Emil Abderhalden, Direktor des physiologischen Institutes der Universitat Halle a d. Saale Lieferung 193 Abt V, Methoden zum Studium der Funktionen der einzelnen Organe des tierischen Organismus, Teil 1, Heft 3—Temperaturmessung mit Thermoelementen Von Ernst B H. Waser Verfahren zur künstlichen Unterhaltung der Atmung Von Walter Sulze Die künstliche Durchströmung der Milz *Von Emil v Skramlik.* Paper Price, 3 90 marks Pp 433 512, with 31 illustrations Berlin: Urban & Schwarzenberg, 1926

Handbuch der biologischen Arbeitsmethoden Herausgegeben von Geh -Rat Prof Dr Emil Abderhalden, Direktor des physiologischen Institutes der Universität Halle a. d Saale Lieferung 190 Abt. VIII, Methoden der experimentellen morphologischen Forschung, Teil 2, Heft 1—Methodik der experimentellen Erzeugung aseptischer und bakterieller Entzündungen. Von Georg Rosenow Die experimentelle Trypanosomenforschung mit Berücksichtigung der chemotherapeutischen Versuchstechnik Von Martin Mayer Paper Price, 5 40 marks Pp 114, with 14 illustrations Berlin: Urban & Schwarzenberg, 1926

Collected Papers of the Mayo Clinic and the Mayo Foundation. Edited by Mrs M H Mellish, H Burton Logie, M D, and Charlotte E. Figen Mann, B A Volume XVII, 1925 Cloth Price, $13 net Pp. 1078, with 252 illustrations Philadelphia W B Saunders Company, 1926

Acidosis By Paulina Beregoff, Directora del Laboratorio de Bacteriologia y Parasitologia de la Facultad de Medicina, Universidad de Cartagena Paper Pp 87, with illustrations Cartagena, 1925.

Medicolegal

Notices Posted in Hospital Limiting Its Liability

(McBride v Clara Barton Hospital (Calif.), 241 Pac. R 941)

The District Court of Appeal of California, First District, division 2, in affirming a judgment in favor of the plaintiff for damages for burns on one of his legs while he was a patient in the hospital operated by the defendant corporation, says that the jury brought in a verdict for $5,000, but the plaintiff consented to waive $2,000 of the verdict He was a child who had been taken to the hospital to have a tonsillotomy performed. His mother stated at the hospital that she wanted a special nurse detailed. A nurse in hospital uniform made the bed and put in a hot water bottle, and, according to the evidence, another nurse put the boy in bed, and afterward there was a special nurse for him—one procured by the defendant, but for whom it denied any responsibility. However, the court thinks that it was quite clear, in its view of the evidence, that there was no error committed in giving an instruction taking from the jury all issues excepting the amount of the damages. There was no legal evidence before the trial court that the first nurse mentioned, or the one mentioned as having put the boy in contact with the hot water bottles, or the special nurse, was not, each of them, the agent of the defendant. The law imposed on the defendant the burden of introducing evidence to show that said individuals, and especially the last two mentioned, were not its agents, and that the defendant was not guilty of negligence. It wholly failed to sustain that burden.

There was evidence that the defendant had posted in different places in its premises certain notices limiting its liability. There was no evidence that the plaintiff or his parents saw or read the notices or entered into any contract limiting the liability of the defendant. The defendant did not call to the attention of this court any statute that authorizes a hospital to limit its liability by posting notices. The trial court did not err in refusing to admit the contents of the notices in evidence. Another ruling was clearly correct, which sustained an objection to the attempt of the defendant to introduce in evidence what it claimed to be the custom obtaining in the city in regard to hospitals employing special nurses called in from the outside, controlling and supervising such nurses, and collecting for and paying to such nurses their compensation.

Hearing denied by the Supreme Court of California.

Opinions of Laymen Versus Those of Alienists

(Benson v. Burdick, Superintendent, etc. (N. Y.), 213 N. Y. Supp. 220)

The Supreme Court of New York, Appellate Division, Third Department, says that in this habeas corpus proceeding to inquire whether or not relator Benson was legally detained in the Dannemora State Hospital for Insane Criminals, the jury had examined him; they had observed him and heard him answer questions during a lengthy examination and cross-examination They had expressed their opinion that he was sane, and this opinion the county judge had approved. No physician or alienist gave testimony on his behalf. On the other hand, two qualified alienists and two physicians of some experience had examined and observed him, and each had expressed the opinion that he was insane. There was also the "case book" of the relator, kept in the hospital, which was used at the trial, and which was a part of the record. In but one entry in the record was there any conflict with the oral testimony of the alienists; it occurred in the report of two physicians in 1919, who, while finding the relator insane, expressed the opinion that he was not then likely to do injury to himself or to others. Otherwise the entries in this book uniformly supported the oral testimony, given at this trial, that he was subject to delusions, entertained ideas of persecution without any foundation therefor, thought every one against him, and that some were plotting against him; that he was quite uniformly depressed, became quickly excited during conversations, when his supposed wrongs were mentioned, and "had many ideas of a paranoid nature." At the same time, usually he was quiet, got along without trouble, and conversed rationally. Since he had been in the hospital, two county judges and four justices of the supreme court had pronounced him insane. Should, then, the opinions of laymen, based on a few hours' observation, be permitted in court to overcome the unanimous opinion of alienists who had observed the relator for years and gave grounds on which they based their opinions; also to overcome the opinions of competent physicians, as well as the evidence in the hospital records of his case? Having in mind the definition of paranoia, this court realizes that his appearance before the county court and jury may have disclosed no evidence of a disturbed mental condition, and yet he may have been at the time a paranoiac, while, unless this court disregarded entirely the testimony of the alienists and physicians and his hospital record, this court would have to find that he was a paranoiac. In other words, in this court's view, there was little, if any, conflict in the evidence; all that the county court and jury saw and heard could exist, and yet the medical testimony be entirely true, and the medical opinions fully justified and undisputed. The order of the county court discharging the relator from the custody of the superintendent of the hospital should be reversed, and the relator committed to the hospital, a state institution for the custody of the insane. This court disapproves of the finding that he was sane or had recovered his sanity.

Measure of Damages for Giving Up of Practice

(O'Brien v. O'Brien (Calif.), 241 Pac. R. 861)

The Supreme Court of California, in affirming a judgment for the plaintiff, says that she brought this action to quiet her title to a parcel of land. The answer of the defendant stated, among other things, that, in March, 1914, the plaintiff and the defendant were married; that for more than twenty years prior thereto he had been a duly licensed practitioner of medicine and surgery and had for several years prior to 1914 received from his practice from $7,000 to $12,000 net a year; that the plaintiff was possessed of property of the value of about $250,000; that it was agreed that on their marriage the defendant should discontinue his practice of medicine and should aid the plaintiff in the care of her property, which should support them both; that the plaintiff should make certain provisions for the defendant by her will; and that after their marriage she made a will by the terms of which she devised the property described in the complaint to the defendant. The parties separated in 1916.

The court assumes that under the circumstances alleged sufficient part performance to take the contract out of the statute of frauds was shown. The mere promise of the plaintiff to reduce the contract to writing and her failure or refusal to do so did not constitute fraud. That the subject matter of the alleged contract was lawful was not questioned. That the contract was unique must be admitted. What may be assumed to have been the defendant's proposal of marriage was conditioned on the promise on the part of his prospective wife that she would make it possible for him to receive more than two thirds of her $250,000 estate and in the meantime he would husband her resources, so to speak. Without such promise on her part he would not have married her. But the parties had the right to make that sort of contract, and it is assumed that the plaintiff had the right to bargain away her power to revoke said will. What, then, would be the nature of the relief to which the defendant might be entitled?

In the situation of the parties a remedy by way of specific performance was not available to the defendant, for the reason that such a remedy would not be mutual, in that the defendant could not be compelled specifically to perform his part of the contract; namely, to assist in the care and management of the plaintiff's property, a purely personal service. If this were an action by the defendant as the survivor against the representatives of his deceased wife's estate, the measure of damages would probably be the value of the property agreed to be devised or bequeathed. But the court was here dealing with a controversy inter vivos, or between living persons. The defendant might not survive the plaintiff. If he did not, he conceded that all his rights would expire with him. He was therefore confined to the relief which the court might impose on the plaintiff by requiring her to compensate him for whatever damages he had suffered by reason of his change of position to his detriment in giving up his medical practice in the county where it had been and establishing his practice elsewhere. The loss which he claimed to have so suffered was such damage as the law might reasonably fix and determine. The fixation of damages in tort actions accruing to a professional man by reason of the interruption of his business is too common to require reference. The value of the business before and after such interruption is necessarily taken into consideration in fixing the damage. The measure of the defendant's damage therefore was an amount which would compensate him for the detriment he had suffered on account of his change of position. However, in order that the amount thereof might be properly ascertainable, it was necessary for the defendant to allege facts from which, when proved, the court might properly fix the amount. But he failed or refused to allege his age, so that the court might properly receive proof of his expectancy. He failed utterly to advise the court or the adverse party as to his revenues from his present practice, which practice it might reasonably be inferred had been carried on for many years. Conclusions only and not facts were alleged. This court is satisfied from an examination of the pleadings that the plaintiff was entitled to allegations of fact which would advise her and the court of something more than mere opinion on matters so vital to the defendant's cause and his alleged loss of business. He presented six different pleadings to the court wherein objections were successfully made to their sufficiency, and on his failure to request leave to amend further the court was justified in rendering judgment against him.

Valid Rules to Protect Health of School Children

(Stone v. Probst et al. (Minn.), 206 N. W. R. 642)

The Supreme Court of Minnesota says that the home rule charter of the city of Minneapolis provides that the board of education of the city shall have entire control and management of the common schools within the city, and make rules and regulations for the government of the schools. Pursuant to the authority indicated, the board provided that principals and teachers must be on the alert to discover suspected contagious diseases, filth or vermin, and physical and mental defects. Against conscientious objection, medical examination will not be made; but, where such examination is necessary for the protection of the health of other children, a child is excluded until it presents the same evidence that is required of other children who are excluded because of infectious disease.

The plaintiff's daughter, aged 6 years, became ill with a throat infection, by reason of which she was troubled with hoarseness. Her exclusion from school followed. She was entitled to return on the school authorities being furnished with a negative report on a throat culture submitted to the division of public health of the city, and, in addition to that, the presentation of a certificate from a physician as to the condition of her throat, or submission to a physical examination by the regularly employed school physicians or nurses. Refusal of compliance was based on conscientious objections incident to being a Christian scientist. The plaintiff procured an alternative writ of mandamus requiring the respondent, who was the principal of the school which the pupil attended, to readmit her or show cause why she should not be received. The answer pleaded the rules and the condition of the pupil. The trial court quashed the writ and dismissed the action, after which it denied the plaintiff's motion for amended findings or a new trial, its order in respect to which denial is affirmed.

It must be conceded by all that one of the primary duties of the board of education is to protect the health of the many children in its charge. Persons differ only as to how this is to be accomplished. Efforts for prevention do much to avoid an epidemic. The demand on the board for vigilance in this respect is imperative. All authority exercised in the protection of the public health is to be liberally construed. This (supreme) court holds that the language of the charter by fair implication confers on the board of education the power to make and enforce the rules involved. In fact, it could not effectually carry out the purposes for which it exists without such power. This court does not agree with the contention that the school board by its rules had assumed to enact a law and that it was without legislative authority. Of course the legislative body cannot be permitted to relieve itself of this power by delegating it to another body. But the constitutional inhibition cannot be extended so as to prevent the grant of legislative authority to administrative boards to adopt rules to carry out a particular purpose. These rules come within this class and are administrative provisions. They are also the result of the valid exercise of the police power invested in the board of education by virtue of the language of the charter. Nor does it follow that, because the people through their charter have delegated the matter of health to the board of public health, the board of education is denied the exercise of the same powers to such an extent as may reasonably be necessary to carry out the purposes for which it was created. Neither are the rules of the board of education invalid because inapplicable to children in parochial schools, such rules being for the protection of pupils in the public schools. The other children are subject to public health regulations made by the proper body. Furthermore, the fact that the notice of exclusion mentioned the wrong source of authority was not important.

This court concludes that the rules were made in good faith and were not unfair, arbitrary or unreasonable, and hence could not be disturbed by the courts. It was urged that the statutes tend to show the rules in reason should be more considerate and be operative only in case of an epidemic, and then only for a reasonable time; but it seems more reasonable to the court to have the rules applicable in preventing as well as in controlling an epidemic. The court should not attempt to substitute its judgment as to what the rules should be, when operative, or the period of operation. The board provides a way for the child to qualify for admission without any expense. The matter is entirely in his own hands. That attendance at school is compulsory was mentioned, but not commented on.

Injury to Workman from Fall Caused by Epilepsy

(Marion Machine Foundry & Supply Co. et al. v. Redd et al. (Okla.), 241 Pac. R. 175)

The Supreme Court of Oklahoma says that under the workmen's compensation law of that state compensable injuries are restricted by the provision that "'injury or personal injury' means only accidental injuries arising out of and in the course of employment and such disease or infection as may naturally and unavoidably result therefrom." The claimant in this case was at work with a pick digging out a concrete foundation of some character. Something like 10 feet from where he was engaged in work there was a gas flame burning for his comfort and that of other workmen. Being seized with an epileptic fit, to which he was subject, he fell in such a way that his hand was burned by the flame before he could be removed by other workmen. That the accident was one arising in the course of the employment there could be no doubt. Could it be said that the injury had its origin in a risk connected with the employment and flowed from that source as a rational consequence? Was there any causal connection between the conditions under which the work was required to be performed and the resulting injury? The particular work was not hazardous. But for the epileptic seizure there would have been no injury. This court thinks that the injury was not one arising out of the employment. In short, the court holds that where the injury suffered is the result of a fall caused by an attack of epilepsy, such injury is not one arising out of the employment, and it is not compensable under the workmen's compensation law.

Society Proceedings

COMING MEETINGS

Associated Anesthetists of the United States and Canada, Nottingham, England, July 20-23. Dr. F. H. McMechan, Avon Lake, Ohio, Sec'y.

Idaho State Medical Association, Sandpoint, Sept. 2-5. Dr. J. N. Davis, Kimberly, Secretary.

Montana, Medical Association of, Billings, July 16-17. Dr. E. G. Balsam, 222 Hart-Albin Building, Billings, Secretary.

Wyoming State Medical Society, Lander, July 12-13. Dr. Earl Whedon, Sheridan, Secretary.

MEDICAL ASSOCIATION OF GEORGIA

Seventy-Seventh Annual Meeting, held at Albany, Ga., May 12-14, 1926

The President, **Dr. Frank K. Boland**, Atlanta, Ga., in the Chair

Conjunctivitis Tularensis

Dr. Sach W. Jackson, Atlanta: This is the second case observed in Georgia, although the original source of infection was in Tennessee. A lad, aged 18, went rabbit hunting, killing several rabbits, which he cleaned. Soon afterward his left eye became inflamed. The eye presented the picture of an acute purulent conjunctivitis. The usual treatment failed to give relief. Smears and cultures were negative. Blood examination gave a positive agglutination for *Bacterium tularense*. A Wassermann test from the same specimen of blood was negative. The case was especially interesting because of the absence of constitutional manifestations. They have always been present in the fourteen other eye cases of this sort now on record. The last treatment given was a 1 per cent solution of mercurochrome-220 soluble to be instilled into the eye several times daily. The conjunctival infection gradually subsided.

Deafness

Dr. Dunbar Roy, Atlanta: If any criticism is due the practice of medicine today it is engendered by the fact that it has become too scientific and too much built on laboratory results. In this age of microscopes and laboratory technic, the medical profession is too prone to lose sight of the psychology of the personal equation, thereby failing to obtain results either satisfactory to itself or to its patients. The study of deafness requires the most minute thoroughness. The idea of superficial examination when a case of deafness presents itself is an injustice to the patient as well as to the otologist. Proper examination and tests with a thorough inquiry into every phase of the patient's personal and family history is just as important as it is for any other obscure physical ailment. A complete record should be kept of every such patient, and periodic examinations as to the improvement in hearing should always be made, as only in this manner can the progress of the case be determined. Deaf persons lend themselves too frequently to the wiles of the charlatan and the quack, and if the otologist does not offer something definite to those unfortunates they will find themselves the prey of the unscrupulous so-called specialists.

Gallbladder Surgery with Reference to the Unrelieved Case

Dr. R. M. Harbin, Rome: The liver, being the great incinerator, is liable to overtax, and in the presence of age, dietetic affronts and foci of infection, ill defined symptoms of long standing probably have their origin in unrecognized and transient forms of cholecystitis, pericholangitis and hepatitis. The liver, pancreas and gallbladder belong to a physiologic system in which certain infective processes are reciprocal in character, the symptoms of one becoming more or less common to all. When the gallbladder loses its function as a shock absorber for back pressure in the bile ducts, infective processes become accelerated. Dysfunction of the liver is a predisposing factor that favors the development not only of contiguous disease but also of certain general abnormal conditions, especially in the aged. Early removal of the gallbladder offers a cure only when it has been the major tion of the febrile period of 3.66 days, whereas twenty-one boys who received no inoculation showed an average duration of the febrile period of 6.45 days. The average maximum temperature of the thirty-two who received convalescent blood at least eight days before the development of the rash was 102.5 F., whereas the average maximum temperature of the twenty-one who received no inoculation was 103.5 F. The average stay in the infirmary of the thirty-two inoculated boys was 9.7 days, whereas the average stay of the control group was 13 days. No complications whatever occurred in the inoculated group of thirty-two, whereas in the control group of twenty-two there was one case of bronchopneumonia, one of otitis media, one of frontal sinusitis, and one of external otitis. The mild character of the disease in many of the boys who received inoculations was very striking. The inoculations had no ill effects whatever. Beneficial effects were obtained whether the blood was administered as late as six days after exposure or as early as twelve days before the probable date of infection.

California and Western Medicine, San Francisco

24: 577-720 (May) 1926

Making World Better. E. N. Ewer, Berkeley.—p. 609.
Looking Backward with Satisfaction and Forward Without Apprehension. W. T. McArthur, Los Angeles.—p. 614.
*Effects of Insulin Treatment on Experimental Diabetes of Dogs. E. F. F. Copp, La Jolla.—p. 618.
*Treatment of Acute Peritonitis. A. Weeks and L. Brooks, San Francisco.—p. 622.
Clinical Significance of Bundle Branch Lesions. A. S. Granger, Los Angeles.—p. 626.
*Clinical Picture of Beginning Carcinoma of Stomach with Animadversions on Roentgen-Ray Illusions in Gastro-Intestinal Disease. H. I. Wiel, San Francisco.—p. 628.
*Functions of Humidity. D. Blake, San Diego.—p. 631.
Vincent's Angina: Significance of Fusiform Bacilli and Spirilla in Mucous Membrane Lesions. H. E. Miller and N. Epstein, San Francisco.—p. 633.
Blood Staining of Cornea. C. Maghy, Los Angeles.—p. 637.
*Thyroiditis. H. H. Searls and E. I. Bartlett, San Francisco.—p. 639.
Surgical Aspects of Tuberculous Peritonitis. C. D. Lockwood, Pasadena.—p. 642.
Recognition of Psychoneuroses. J. B. Doyle, Rochester, Minn.—p. 645.
Etiology of Eclampsia. P. O. Sundin, Los Angeles.—p. 652.

Effect of Insulin on Experimental Diabetes.—The pathologic changes of the pancreas as a result of diabetes, whether seen in man or in the dog, Copp says, are almost identical. In both cases the beta cells of the islands become vacuolated as a result of functional overstrain. Copp has seen that the pathologic changes of the pancreas of diabetic dogs return under careless control, and believes the same occurs in man. Complete disappearance of the hydropic degeneration of these beta cells of the islands of Langerhans and the restoration of the islands to normal was found after a period of fourteen days of insulin treatment. About the ninth day vacuolation began to subside, but before this period very little recovery could be noticed. Careless control of the diabetes showed that the functional overstrain on the islands had not been relieved, as they still showed hydropic degeneration. Copp says there is reason to believe that hyperglycemia, without sugar in the urine, will prevent the clearing up of the pathologic picture of vacuolation of island cells.

Treatment of Acute Peritonitis.—Weeks and Brooks relate their experience with 5 per cent glucose, 5 per cent sodium bicarbonate and physiologic sodium chloride solution in the treatment of peritonitis.

Early Symptoms of Carcinoma of Stomach.—Wiel relates a case proved by surgical operation and histologic findings to be one of carcinoma of the stomach actually in its very first stages. The history is typically that of the usual patient—indigestion, pain and coffee-ground vomitus with loss of weight. Wiel stresses particularly the failure of the roentgen rays in depicting a characteristic picture and urges not to place too much reliance on this aid to diagnosis.

Functions of Humidity.—A thorough understanding of humidity Blake regards as being vital to public health, and its study should be removed from the physicist's laboratory and placed where its many branches and ramifications can be approached, not only by the theorist, but by the practical man as well. To insure a minimum amount of affections of the throat and nose, and consequently the respiratory organs, these problems should be studied by the physician, the architect, the contractor, the builder and the meteorologist.

Thyroiditis.—A true chronic diffuse thyroiditis is very difficult of diagnosis. Of seventeen such cases selected by Searls and Bartlett for their typical pathologic picture, only three were correctly diagnosed preoperatively, the condition in eight being called toxic adenomas, and in the remaining six hyperplasia. Of these seventeen cases of chronic thyroiditis from four years to six months postoperative, nine patients have answered follow-up letters recently. One received no benefit from her surgical treatment, became progressively weaker, developed a psychosis and died. Another died a few months after operation of an apparently independent condition. Of the remaining seven, two report that they were moderately improved, two that they were very markedly improved, and three that they were completely cured by their surgical treatment. Concerning the effect of treatment on signs and symptoms of insufficiency, four noted marked improvement and three observed no change. A second series (twenty cases) in which the pathologic picture was that of hyperplasia with an associated chronic thyroiditis was also analyzed from the standpoint of the clinical picture in an endeavor to establish grounds for a secondary diagnosis of inflammation. In these cases, prognosis was far better than in the pure thyroiditis cases. Nine out of the twenty patients answered follow-up letters. All of these felt that operation had cured them. Signs of hypothyroidism were more persistent. Only three noted return to normal, in the amount and texture of their hair and a cleaning up of their skin. Four considered that there was some improvement, while in the remaining two these conditions have become worse. Two cases of "iron-hard" thyroiditis are being followed. Both are very much improved. One shows a suggestion of hyperfunction, while the other evidences mild insufficiency.

Illinois Medical Journal, Oak Park

49: 353-440 (May) 1926

Nephritis. F. M. Allen, Morristown, N. J.—p. 401.
Recent Advances in Urology. D. N. Eisendrath, Chicago.—p. 406.
*Treatment of Endamebiasis: Stovarsol. P. W. Brown, Rochester, Minn.—p. 410.
Roentgenotherapy of Fibroids and Other Gynecologic Diseases. M. E. Hanks, Chicago.—p. 414.
Ununited Fracture of Humerus of Forty Years' Standing. R. E. Hunt, Belvidere.—p. 419.
Medical Treatment of Peptic Ulcer. A. A. Goldsmith, Chicago.—p. 420.
Treatment of Fractures. F. Christopher, Winnetka.—p. 425.
Inventory. M. Pfeiffenberger, Alton.—p. 430.
*Prophylaxis of Carcinoma of Rectum. J. R. Pennington, Chicago.—p. 433.
Does Smoking Affect Vision? F. L. Alloway, Champaign.—p. 434.
Strangulated Hernia in Eighteen Day Old Baby: Operation; Recovery. B. H. Breakstone, Chicago.—p. 436.

Treatment of Endamebiasis.—The wide distribution of *Endameba histolytica* is stressed by Brown. He says that emetine continues to be an invaluable drug in the treatment and seems to be particularly effective in rapidly controlling most of the acute phases of endamebiasis. The organic arsenical compounds would seem to be more effective in eradicating the parasite than are ipecac and its derivatives. The possibilities of cure depend more on persisting with varying types of treatment rather than on any one drug. From a small series of cases of ulcerative amebic proctitis, the indications are that recurrence is more likely in this group than in those without gross ulcerative lesions.

Prophylaxis of Carcinoma of Rectum.—It is generally agreed that cancer never begins in healthy tissue. Conceding this, Pennington says, cancer of the rectum is a secondary disease and as such is largely preventable. The early symptoms of cancer of the rectum, then, are those of such conditions as are responsible for the development of cancer. Such symptoms, however, are not always the precursor of cancer, any more than bleeding is always the precursory symptom of hemorrhoids. Preventive treatment, or rather the cure of those ailments which may lead to the development of cancer of the rectum, is the treatment *par excellence*. The terminal bowel should receive periodic examinations and efficient treatment of any and all of its pathologic conditions when discovered. Moreover, such conditions should be removed by that method which leaves the least possible scar or point of irritation, as cancer may develop in either.

Indiana State Medical Association Journal, Ft. Wayne

19: 185-220 (May) 1926

Invasion of Syphilis. F. W. Cregor and F. M. Gastineau, Indianapolis.—p. 185.
Renal Decapsulation in Mercuric Chloride Poisoning: Case. E. R. Denny, Miami Beach, Fla.—p. 186.
Cesarean Section Under Local Anesthesia. C. O. McCormick, Indianapolis.—p. 188.
Actinomycosis: Case Involving Duodenum and Biliary Tracts. M. Buchsbaum, Gary.—p. 191.
Roentgenographic Examination in Diagnosis of Chronic Respiratory Infections. C. A. Stayton, Indianapolis.—p. 193.

Iowa State Medical Society Journal, Des Moines

16: 205-254 (May) 1926

Diagnosis of Heart Lesions. R. B. Preble, Chicago.—p. 205.
*General Practice and Relation to Preventive Medicine. W. J. Connell, Dubuque.—p. 210.
Public Health in Rural Communities. J. H. Chittum, Wapello.—p. 213.
*Treatment of Chronic Ulcerative Colitis. J. A Bargen, Rochester, Minn.—p. 218.
Cecal Ptosis. K. L. Johnston, Oskaloosa.—p 221.
Plea for Psychiatry in Field of Medical Science. A. D. McKinley, Des Moines.—p. 224.
Cooperation in Management of Peptic Ulcer. W. E. Gatewood, Iowa City.—p. 230.
Some Surgical Conditions Found in Lower Abdomen. M. J. McGrane, New Hampton.—p. 236.
Incidence of Meckel's Diverticulum. R. C. Coleman, Estherville.—p. 238.

County Health Activities.—Connell suggests that enabling legislation be provided for the establishment of county health units. All health activities should be under the supervision of the state and county medical societies. Rickets is preventable. Cod liver oil should be given to practically all children over 2 months of age, especially from October to April. All children should be immunized against diphtheria at 1 year of age. Diphtheria can gain no foothold in an immune population.

Etiology and Treatment of Chronic Ulcerative Colitis.—Published in *Archives of Internal Medicine*, December, 1925, and abstracted in The Journal, March 27, p. 979.

Kentucky Medical Journal, Bowling Green

24: 201-238 (May) 1926

*Simplified Technic for Anastomosis of Large Bowel. F. P. Strickler, Louisville.—p. 202.
Blood Chemistry in Diagnosis and Prognosis of Disease. E. S. Maxwell, Lexington.—p. 206.
Surgery of Pancreas. L. Frank, Louisville.—p. 209.
Use of Dyes in Treatment of Disease. H. H. Hagan, Louisville.—p. 213.
Some Surgical Considerations of Tumors of Breast. G. Aud, Louisville.—p. 220.
Radiation Therapy of Female Breast. J. P. Keith and D. Y. Keith, Louisville.—p. 222.
Infant Feeding. J. W. Bruce, Louisville.—p. 230.
*Bilateral Optic Neuritis from Menstrual Disturbance: Case. S. G. Dabney, Louisville.—p. 235.

Anastomosis of Large Intestine.—In the method described by Strickler, the crushed ends of the intestinal stumps are severed, thereby leaving the smallest possible diaphragm at the site of the anastomosis. An instrument has been devised to accomplish this step of the operation. The operation is performed with the aid of an Eve's tonsil snare, having a tubular knife which fits snugly over the shaft of the tonsil instrument. The snare is of the type provided with an adjustable ratchet, and simply holds the intestines in position. The tubular knife is used to sever the ligated stumps of the intestines at the site of the anastomosis. The anastomosis is aseptic. At no step of the operation is the lumen of the intestines entered, thereby reducing infection to the minimum. Also the smallest possible diaphragm is left within the lumen of the anastomosed intestines, greatly reducing the amount of scar tissue and the possibility of constrictions.

Optic Neuritis from Menstrual Disturbance.—Dabney reports the case of a girl, aged 11, who had optic neuritis caused by toxemia due to menstrual disturbances. There was typical optic neuritis with swelling of the disk and both eyes were affected. The history shows no other cause for the condition except menstrual disturbances.

Michigan State Medical Society Journal, Grand Rapids

25: 205-258 (May) 1926

*Transport Mechanism of Alimentary Tract and Clinical Significance. C. F. McClintic, Detroit.—p. 205.
Newer Things in Dentistry. W. G. Kinyon, Traverse City.—p. 209.
Ear Complications in Some of More Common Acute Infectious Diseases. B. F. Glowacki, Detroit.—p. 211.
*Frequency of Lethargic Encephalitis in Michigan. N. R. Smith, Ann Arbor.—p. 214.
State Efforts to Prevent Insanity. E. S. Neihardt, South Boardman.—p. 215.
Teeth: Their Uses and Abuses. L. I. Luton, Detroit.—p. 218.

Transport Mechanism of Alimentary Tract.—McClintic shows that at definite locations along the gastro-intestinal tract there are nerve centers from which the impulses regulating gastro-intestinal movements take origin. From disturbances of these nodes, abnormal motor activity may result, such as vomiting, intestinal stasis, spasm, spastic constipation and atonic constipation. A knowledge of the neuromuscular mechanism involved in motor disturbances of the alimentary tract forms a rational basis for the therapeutic treatment of the condition; e. g., to relax a spasm by local action on the musculature, magnesium sulphate may be used; to relax the spasm by acting on the intrinsic ganglion, atropine may be used, or by action on the sympathetic ganglion, epinephrine may be used. To tone up the neuromuscular mechanism in atonic states, pituitary extract and physostigmine may be used for local action and strychnine for its stimulating effect on the spinal cord mechanism. The application of the principles has proved successful in practice.

Epidemic Encephalitis in Michigan.—During 1923, 1924 and 1925, there occurred in Michigan 188 cases of epidemic encephalitis with 165 deaths. From 1921 to 1925, there occurred 152 cases of Parkinson's syndrome following encephalitis.

Military Surgeon, Washington, D. C.

58: 449-592 (May) 1926

Medical Service in France. B. K. Ashford.—p. 491.
Diverticulum Hernia of Bladder. H. W. Jones and F. M. Moose.—p. 508.
Foods and Deficiency Diseases in War. J. H. Huddleson.—p. 510.
Eccentricity: Factor in Leadership and Morale. B. F. Duckwall.—p. 524.

Minnesota Medicine, St. Paul

9: 217-290 (May) 1926

Psychotherapy in Surgery. V. Pauchet, Paris.—p. 217.
Clifford Allbutt and Medical Ophthalmoscopy. W. L. Benedict, Rochester,—p. 222.
Formation of Bilirubin. F. C. Mann, C. Sheard and J. L. Bollman, Rochester.—p. 227.
Thyroxin. E. C. Kendall, Rochester.—p. 230.
*Poliomyelitis. E. C. Rosenow, Rochester.—p. 231.
Cysts of Thyroglossal Duct. W. E. Sistrunk, Rochester.—p. 235.
Surgery in Home. R. L. Christie, Long Prairie.—p. 237.
*Mercurochrome in Acute Infections of Central Nervous System. W. H. Hengstler, St. Paul.—p. 240.
*Volvulus of Small Intestine. C. C. Kennedy, Minneapolis.—p. 243.
Surgical Treatment in Duodenal Ulcer. V. S. Cabot, Minneapolis.—p. 248.
Diagnosis and Medical Management of Duodenal Ulcer. A. A. Wohlrabe, Minneapolis.—p. 250.
Inflammation from Duodenal Ulcer, with Obstruction of Common Bile Duct. S. F. Haines, Rochester.—p. 265.
Mucocele of Appendix. F. Christopher, Winnetka, Ill.—p. 265.
Fibroma of Ovary. H. M. N. Wynne. Minneapolis.—p. 267.

Poliomyelitis.—In preliminary tests with various antigens, it has been found by Rosenow that strains of the streptococcus freshly isolated from poliomyelitis and which produced flaccid paralysis in rabbits yield suitable toxic antigens when grown for twenty-four hours in pancreatic digest broth, to which approximately 10 per cent of ascites fluid is added at the time of inoculation. Thus far, the skin test has been made on twenty-eight persons who had recovered from attacks of poliomyelitis from four weeks to years previously. Of these, twenty-one gave a negative reaction and seven a mildly positive reaction. All of three patients with poliomyelitis gave strongly positive reactions during the acute attack, while two of these reacted negatively a month later. One gave strongly positive reactions on the third day of illness, mildly positive reactions eight days later, and negative reactions four weeks after the onset of the attack. Nine persons, mostly children, who had what was considered abortive attacks of poliomyelitis during an epidemic, were tested from five to eight weeks later. Six gave negative and three mildly positive reactions. The results in controls, chiefly in family groups in whom no illness suggestive of poliomyelitis had occurred, were as follows: strongly positive in twenty-five cases, mildly positive in eighteen, and negative in seventeen. Of forty-five children from 5 to 10 years of age at an orphanage, 73 per cent gave a strongly positive reaction, and of the remaining thirty-one children from 11 to 16 years of age, 45 per cent gave a strongly positive reaction. Of ninety-eight high school pupils ranging from 14 to 19 years of age, only 28 per cent gave a strongly positive reaction.

Mercurochrome in Central Nervous System Infection.—As the result of his experience, Hengstler concludes that mercurochrome is of no value in the treatment of central nervous system infection. Three cases of meningitis, occurring secondary to middle ear infection in which this treatment failed, are reported.

Volvulus Due to Adhesions.—The five cases of volvulus reported by Kennedy were all due to the ileum becoming adherent to some other structure, the gallbladder, an ovarian cyst, the sac of a hernia, the ovary, the uterus and adnexa.

Nebraska State Medical Journal, Norfolk

11: 169-208 (May) 1926

*Multiple Sarcoma of Brain. T. L. Houlton, Omaha.—p. 169.
Classification of Goiter: Iodine Therapy. W. J. Arrasmith, Grand Island.—p. 174.
Pneumothorax. S. O. Reese, Lincoln.—p. 178.
Laboratory Service. W. B. Moody, Omaha.—p. 181.
Pathology of Malnutrition. V. E. Levine, Omaha.—p. 184.
Report of Nebraska Hospital Committee of American College of Surgeons. M. Emmert, Omaha.—p. 189.
Medical Education and Country Doctor in Nebraska. F. A. Long, Madison.—p. 191.
Choice of Operation for Cancer of Rectum. C. J. Drueck, Chicago.—p. 195.
Hydatid Cyst of Inferior Border of Liver. N. H. Rasmussen and T. E. Riddell, Scottsbluff.—p. 198.

Multiple Sarcoma of Brain.—There were two tumors in Houlton's case, a small one giving no symptoms, and a large one, giving very definite and interesting neurologic findings. There was a fair sized, somewhat encapsulated tumor mass in the genu and posterior wing of the left internal capsule, and a second smaller mass, about the size of a pea, beneath the cortex of the frontal lobe of the same side, well forward from the motor area. The larger tumor in the posterior wing of the internal capsule had penetrated for a short distance into the adjacent tissue of the basal ganglion. The posterior horn of the lateral ventricle was partially obliterated by the growth.

New Jersey Medical Society Journal, Orange

23: 203-260 (May) 1926

Fatigue as Preclinical Symptom of Disease. G. B. Emory, Morristown.—p. 203.
Preclinical Stage of Cardiovascular Disease. H. M. Larson, Morristown.—p. 206.
Early Evidence of Mental and Nervous Disorders. G. B. McMurray, Greystone Park.—p. 209.
Preclinical Signs and Symptoms of Gastro-Intestinal Disease. E. N. Peck, Boonton.—p. 211.
Preclinical Evidence in Gynecology. I. F. Frost, Morristown.—p. 212.
Preclinical Signs and Symptoms of Disease of Genito-Urinary System. T. S. Thomas, Morristown.—p. 215.
Periodic Health Examinations. A. C. Morgan, Philadelphia.—p. 221.

New Orleans Medical and Surgical Journal

78: 719-792 (May) 1926

Truth Versus Prejudice. C. M. Ellis, Crowley, La.—p. 719.
Suprarenal Hemorrhage in Newly Born. M. Loeber and E. H. Lawson, New Orleans.—p. 723.
Thymus Enlargement in Infants and Children. H. F. Garrison, Jackson, Miss.—p. 727.
Nontuberculous Diseases of Chest. F. W. Henderson, New Orleans.—p. 730.
Use of Pituitary Extract in Obstetrics. E. H. Linfield, Gulfport, Miss.—p. 733.
Diagnosis of Goiter. W. C. Chaney, Memphis, Tenn.—p. 737.
Gastric and Duodenal Ulcer and Duodenal Carcinoma. E. Bloch, New Orleans.—p. 742.
Afro-American Therapeutics. G. M. Niles, Atlanta, Ga.—p. 747.
Cancer: Its Control. W. F. Wild, New York.—p. 750.
Lactic Acid Milk in Infant Feeding. F. S. Hill, Grenada, Miss.—p. 759.
*Insulin in Treatment of Persistent and Pernicious Vomiting in Pregnancy. T. B. Sellers, New Orleans.—p. 761.
Appendicitis. E. S. Bramlett, Oxford, Miss.—p. 766.

Insulin in Treatment of Vomiting of Pregnancy.—Sellers agrees with Thalhimer that the most plausible explanation of toxemia in early pregnancy is a defective carbohydrate metabolism, rather than a deficiency in the carbohydrate. In the more serious cases, or cases in which it is not practical to use the duodenal tube, 1,000 cc. of 5 per cent chemically pure glucose solution is given, preferably by the Matas-intravenous drip. For every 2 Gm. of glucose, one unit of insulin is given hypodermically. This is repeated in six hours. Up to the present time, this method has proved 100 per cent efficient.

Northwest Medicine, Seattle

25: 221-284 (May) 1926

Cerebrospinal Fluid, Normal and Pathologic. A. L. Skoog, Kansas City, Mo.—p. 222.
Diagnosis of Intracranial Lesions. G. W. Swift, Seattle.—p. 229.
Pain as Symptom of Disease, Particularly of Nervous System. H. W. Woltman, Rochester, Minn.—p. 233.
Spinal Anesthesia in Abdominal Surgery. C. H. Bastron, Portland, Ore.—p. 240.
Relation Between Audition and Circulation of Blood in Head. H. Stillson, Seattle.—p. 242.
Cerebrospinal Meningitis. C. H. Hofrichter and J. W. Unis, Seattle.—p. 245.
Newer Problems in Nonsurgical Rhinology. R. A. Fenton, Portland, Ore.—p. 248.
Bezold's Mastoiditis; Blood Count in This Disease. L. H. Klemptner, Seattle.—p. 253.
Paraffin Treatment for Burns and Denuded Areas. D. V. Trueblood, Seattle.—p. 255.
Treatment of Cancer of Rectum by Percy Cautery and Endothermy A. C. Crookall, Seattle.—p. 258.

Ohio State Medical Journal, Columbus

22: 378-472 (May) 1926

Liver Function Tests. S. S. Berger, M. B. Cohen and J. J. Selman, Cleveland.—p. 397.
Avoidable Sequelae of Surgery. R. H. McKay, Akron.—p. 401.
Periodic Health Examinations. L. A. Levison, Toledo.—p. 402.
Results of Heliotherapy (Quartz Lamp) Employed in Psychopathic Hospital. C. W. Stone, Cleveland.—p. 405.
Malnutritions in Dairy Community. G. L. Lyne, Sebring.—p. 406.
Case of Osteochondritis of Second Metatarsal. M. Harbin, Cleveland.—p. 408.

Physical Therapeutics, Baltimore

44: 195-250 (April) 1926

Dietetic Suggestions for Cancer, Polyarthritis and Arteriosclerosis. A. Bassler, New York.—p. 195.
Physiotherapy in Postoperative Management of Surgical Cases. J. T. Case, Battle Creek, Mich.—p. 205.
Chronic Arthropathies from Roentgen-Ray Viewpoint. E. S. Blaine, Chicago.—p. 213.
Diathermy in Osseous Disease and Injury. C. R. Brooke, Newark, N. J.—p. 217.
Small Versus Large Doses in Deep Roentgen-Ray Therapy. J. D. Morgan, Philadelphia.—p. 226.

Virginia Medical Monthly, Richmond

53: 71-140 (May) 1926

Lung Collapse in Treatment of Pulmonary Tuberculosis. D. B. Cole, F. S. Johns and P. E. Schools, Richmond.—p. 71.
Puerperal Sepsis: Cases of Intrapartum Infections. M. B. Savage, Norfolk.—p. 74.
*Excessive Vomiting of Pregnancy. L. A. Calkins, University.—p. 78.
*Partial Gastrectomy Under Local Anesthesia for Cancer of Stomach in Man 71 Years of Age. J. S. Horsley, Richmond.—p. 80.
Functional Disorders. B. R. Tucker, Richmond.—p. 85.
Paralysis of Third, Fourth and Sixth Nerves from Sphenoidethmoid Disease. C. M. Miller, Richmond.—p. 88.
Bedside Study of Circulation in Acute and Chronic Infections. G. Nelson Richmond.—p. 91.
Local Anesthesia. W. B. Marbury, Washington, D. C.—p. 95.
Treatment of Eclampsia. M. P. Rucker, Richmond.—p. 97.
*Chronic Hypertension Nephritis in Child, Showing Unusual Neurologic Symptoms. F. H. Redwood, Norfolk.—p. 103.
Diphtheria. J. A. Wright, Doswell.—p. 105.
Present Method of Dealing with Kidney and Ureteral Stone. S. Highsmith, Fayetteville, N. C.—p. 107.
Acute Mastoiditis in Infants: Three Cases. G. B. Dudley, Martinsville.—p. 110.
Diabetes. A. T. Finch, Chase City.—p. 111.
Bone Infections. A. Myers, Charlotte, N. C.—p. 115.
Health in Relation to National Defense. W. A. Gills, Richmond.—p. 119.

Treatment of Vomiting of Pregnancy.—Calkins puts his patients to bed; then, after a period of a couple of hours, the definitive treatment is begun. They are given by rectum 60 grains (4 Gm.) of sodium bromide in 2 or 3 ounces (60 or 90 cc.) of water. This medication is repeated every six hours so that the patient receives four doses of 60 grains, a total of 240 grains (16 Gm.), in each twenty-four hours. It is usually necessary to place the patient on complete starvation for the first twenty-four hours, neither solids nor liquids being allowed. This will serve to stop the retching, which may otherwise continue. At the end of the twenty-four hour period, feeding is begun. At first small amounts of either liquids or solids are allowed, as desired by the patient. The heavy doses of the bromide are continued for a varying period of time, according to the severity of the vomiting and the response of the patient. Usually the patient will be so well under the effects of bromides after two or three days that the dose can then be gradually diminished, first to a 50 grain (3.3 Gm.) dose; then, after a period of another two or three days, to a 40 grain (2.6 Gm.) dose; and then, at the next step, begin giving 20 grains (1.3 Gm.) by mouth, preserving the six hour interval as nearly as possible. During this time the feeding is increased and the patient rather rapidly gotten up to a truly high carbohydrate diet.

Partial Gastrectomy for Cancer.—Horsley removed the *right half of the stomach* from a man, aged 71, for an adenocarcinoma of moderate malignancy with some tendency to colloid degeneration, in December, 1925. This case is interesting because the age of the patient, almost complete obstruction, and apparent cachexia, together with the presence of secondary anemia and a slight chronic nephritis, constituted what would ordinarily be considered an exceedingly bad risk. His general health now is excellent. He has no symptoms of stomach trouble, and eats average meals with comfort. He has gained 16 pounds (7.3 Kg.).

Chronic Nephritis in Child, with Sclerosis of Cerebral Vessels.—Redwood cites the case of a girl, aged 11, whose blood pressure was 230 systolic and 170 diastolic, with four plus blood in the urine and a heavy trace of albumin. Headache and nausea were the chief subjective symptoms. The girl died in coma. Twenty-four hours before death the blood pressure was 290 systolic. When the brain was removed, a most marked degree of arterial change was noted. Both the large and small vessels appeared like pipe stems, especially at the base of the brain. The vessels, when cut, were somewhat resistant to the knife, there being apparently little elastic tissue left. The brain as a whole was somewhat edematous, but no definite cerebral lesion was demonstrated microscopically. The cerebral meninges appeared normal. Microscopic study of the brain, kidneys and blood vessels showed the walls of the vessels greatly thickened with nodules consisting of elongated thickly staining cells. There was some endothelial swelling with fatty detritus and globules within the cells. All of the vessels showed widespread thickening.

West Virginia Medical Journal, Charleston

22: 225-280 (May) 1926

Biliary Surgery. A. C. Harrison, Baltimore.—p. 225.
Ether in Treatment of Secondary Pneumonias of Childhood. G. M. Lyon Huntington.—p. 229.
Pathology and Treatment of Chronic Arthritis. R. Pemberton, Philadelphia.—p. 233.
Combined Use of Glucose and Insulin in Surgery. R. K. Buford, Charleston.—p. 240.
Observations in Eye, Ear, Nose and Throat Practice. T. W. Moore, Huntington.—p. 243.
Medical Treatment of Inflammation of Nasal Accessory Sinuses. J. E. McKenzie, Beckley.—p. 245.
Oral Sepsis as Etiologic Factor in Peptic Ulcer. J. S. Klump, Huntington.—p. 248.

Wisconsin Medical Journal, Milwaukee

25: 213-272 (May) 1926

Physical Basis of Physiologic Action of Roentgen Rays. H. N. Beets, Chicago.—p. 213.
Biologic Effects of Roentgen Ray and Gamma Rays. C. R. Bardeen, Madison.—p. 215.
Rôle of Roentgen-Ray Therapy in Treatment of Malignant Conditions. U. V. Portmann, Cleveland.—p. 223.
Rôle of Radium in Treatment of Malignant Lesions of Mouth, Face and Neck. T. E. Jones, Cleveland.—p. 226.
Carcinoma of Uterine Cervix Treated with Electric Coagulation and Radium. K. H. Doege, Marshfield.—p. 230.
Influenza Epidemic of 1920. W. S. Middleton, Madison.—p. 237.
Obesity: Endocrine or Dietary. E. L. Sevringhaus, Madison.—p. 241.
Acute Lymphatic Leukemia: Case. R. L. Gilman, Ashland.—p. 246.
Motor Innervation of Diaphragm. K. Schlaepfer, Milwaukee.—p. 248.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 855-890 (May 22) 1926

*Cardio-Aortic Syphilis: Treatment. T. F. Cotton.—p. 855.
Mental Inefficients: Treatment or Punishment. W. A. Potts.—p. 857.
*Simple Modification of Midwifery Forceps. J. H. Ferguson.—p. 859.
Case of Sacrococcygeal Chordoma. A. Richardson and A. L. Taylor.—p. 862.
*Prophylactic Value of Scarlet Fever Antitoxin. E. H. R. Harries, D. Hervey and V. Fellowes.—p. 864.
Phenolaine in Ophthalmology. A. Ferguson.—p. 865.
Intra-Uterine Amputation of Left Leg. W. Hornsby.—p. 866.
Two Neonatal Deaths. T. E. Francis and A. B. Slack.—p. 866.

Treatment of Cardio-Aortic Disease.—Cotton holds that antisyphilitic treatment is indicated in syphilitic cardio-aortic disease; that no danger is attached to intravenous injections of arsenic in moderately large doses given without any special precautions, and that arrest in the disease, as shown from the after-histories of patients treated, may be due to antisyphilitic treatment given over a period of five years.

Modified Midwifery Forceps.—The forceps devised by Ferguson are said to be adapted mainly for traction in the cavity and at the outlet, which practically nowadays are the only situations in which forceps should be used; but, in addition, these forceps have potential arrangements for almost perfect high axis traction by tape attachment.

Value of Scarlet Fever Antitoxin.—Harries, Hervey and Fellowes assert that 2.5 cc. of a good concentrated scarlet fever antitoxin will protect a child susceptible to scarlet fever (as assessed by a skin test dose of Dick toxin) for at least a fortnight, and that 10 cc. of an unconcentrated serum of known high blanching titer will confer similar protection, although with less certainty. Concentrated serum in a dose of 2.5 cc. did not produce a serum rash in any of four cases investigated.

Edinburgh Medical Journal

33: 269-328 (May) 1926

*Radiographic Exploration of Bronchopulmonary System by Means of Lipiodol. J. Guy and H. C. Elder.—p. 269.
Oxycephaly. D. M. Greig.—p. 28.
*Tuberculous Lesions in Four Hundred and Four Postmortem Examinations. T. R. R. Todd.—p. 303.

Use of Lipiodol in Lung Roentgenography.—Guy and Elder plead for a wider and more extended application of lipiodol in the diagnosis of bronchopulmonary affections.

Frequency of Tuberculous Lesions in Nontuberculous Persons.—Tuberculous lesions were found by Todd in 69 per cent of 386 persons who died from diseases other than tuberculosis. In 50 per cent of these calcareous—that is to say, healed—lesions were found. In 9 per cent the lesions were quiescent and in another 9 per cent they were active. Lungs and tracheobronchial glands were the organs most frequently involved in adults. Lungs, tracheobronchial glands and mesenteric glands, in that order, were the most common site of tubercle. Other organs, except cervical glands, Todd says, are infected secondarily to those mentioned above. Tuberculosis of the kidney is always a later manifestation and does not heal. There is evidence of a marked tuberculization of abdominal type occurring during early years, and of a later and more constant tuberculization affecting the lungs and the bronchial glands in adult life. Evidence is afforded by the figures relating to abdominal glandular lesions of a marked tendency for those lesions to disappear within the individual. The degree of tuberculization of the population must, therefore, very considerably exceed the percentage of tuberculous lesions which have been found in this series of examinations. It must be greater than 69 per cent. From the facts demonstrated that tuberculosis in later life is mainly pulmonary in type and subacute or chronic in nature, and that in a large proportion of cases the pulmonary disease must have been preceded in the individual by definite abdominal tuberculosis, it would appear that a resistance to this disease is active during later life, and that the disease in a large number of instances must have been due to a lighting up of an early infection and not to a reinfection.

National Medical Journal of China, Shanghai

12: 125-201 (April) 1926

Scarlet Fever Streptococcus Antitoxin. J. W. H. Chun and H. Jettmar. —p. 125.
*Case of Myxedema Simulating Beriberi. C. L. Tung.—p. 142.
*Mercurochrome-220 Soluble in Treatment of Typhoid and Paratyphoid Fevers. E. S. Tyau.—p. 152.
Chemical Analysis and Animal Experimentation of Quisqualis Indica. K. M. Wu.—p. 161.
Use of British Boxer Indemnity Fund for Promotion of Public Health in China. F. C. Yen.—p. 171.
*Soy Sauce as Stimulative Agent in Development of Beriberi in Pigeons. A. A. Horvath.—p. 176.

Myxedema Simulating Beriberi.—A case of myxedema lasting about seventeen years was treated without success in various clinics, because the true nature of the condition was not recognized. It was mistaken for beriberi, on account of myalgia of the lower extremities, puffiness beneath the eyelids and over the face, and swelling, including myxedema and true edema, of the extremities, especially the lower, and on account of the overwhelming prevalence of beriberi in East China. Thyroid therapy promptly raised the very slow pulse rate of 50 per minute to 80, and the subnormal temperature of 95 F. to 98.6 F.; entirely relieved the pain in the lower extremities; caused a rapid disappearance of edema as well as a myxedematous condition of the body; imparted moisture, softness and delicacy to the previously dry, scaly, thickened skin, and gave rise to a state of strength, activity and alertness, including a return of partially lost sexual desire. Severe secondary anemia improved rapidly under combined iron and thyroid therapy, while previous iron therapy alone lasting over several months failed.

Mercurochrome in Typhoid and Paratyphoid.—Mercurochrome, given early and judiciously, is regarded by Tyau as being the most efficient remedy for the treatment of typhoid and paratyphoid fevers. The drug should be freshly prepared and given intravenously at three day intervals in 10 cc. doses for mild infections; while in severe cases treatment should be in the dosage of 5 mg. per kilogram of body weight. In mild and uncomplicated cases, the drug offers 100 per cent cure, with shortening of the course of the disease.

Soy Sauce and Beriberi.—Data presented by Horvath show that soy sauce in some way stimulates the development of beriberi in pigeons, because none of the controls developed beriberi within the same period, although one month is usually sufficiently long for the occurrence of the disease. A case in which beriberi appeared strikingly early (in six days) is of particular interest.

Practitioner, London

116: 337-388 (May) 1926

*Late and Early Carcinoma of Breast. G. L. Cheatle.—p. 337.
*Laxatives and Purgatives. C. W. Chapman.—p. 346.
Congenital Hypertrophic Stenosis of Pylorus. B. Hughes.—p. 351.
Respiratory Factor in Postoperative Treatment of Tonsils and Adenoids. J. D. Lickley.—p. 359.
*Endocrine Basis of Pernicious Vomiting in Pregnancy. W. Dickson.—p. 365.
Light and Its Therapeutics. F. H. Humphris.—p. 375.
Counterirritation. E. F. Cyriax.—p. 382.

Cyst and Carcinoma of Breast.—Cheatle advises the removal of every cystic breast because there are small cysts containing dysgenetic epithelial hyperplasia and affecting usually the terminal parts of one duct and its acini, which are exceedingly dangerous. And yet no one can prognosticate cancerous metaplasia or development. Hence, it is better to sacrifice many breasts and save one life than to resort to conservative treatment and miss a single carcinoma.

Laxatives and Purgatives.—Chapman prefers laxatives to purgatives. The most reliable laxative is senna, alone or in combination with sodium tartrate and carminatives. Infusion of senna pods is efficient and harmless. Cascara, with or without small doses of the extracts of nux vomica and belladonna, makes a useful pill in obstinate cases. Castor oil and petroleum are useful laxatives.

Endocrine Basis of Pernicious Vomiting in Pregnancy.—Dickson has found that the use of mammary substance, by mouth, or the extract (10 per cent) hypodermically, even in large doses, is not deleterious, but produces startlingly good results, because of its antagonism to the ovarian function, which in the early stages has not reached a balance under the new conditions. If, in spite of vomiting, a largely enhanced protein diet is insisted on, to the complete exclusion of all stimulants to gastric secretion, which do not "fix" gastric juice, such as meat extracts, dextrinized foods in general, condiments and alcohol, the condition automatically rights itself, if it has not been allowed to advance too far. If the latter condition exists, epinephrine injections will control the vomiting, so allowing the protein diet to be commenced. The simple expedient of taking a glass of milk fifteen minutes before quitting the recumbent position in the early morning, by women in the gravid state, is often sufficient to ward off any vomiting, and may prevent the supersensitiveness of the stomach associated with pregnancy from the sixth to the fourteenth week or, in fact, during any phase of pregnancy. Should the protein diet appear inadequate at the commencement, it will be found due to the lack of perseverance with an all-protein diet, and to the noninterdiction of liquids at meal times. No fluids are allowed at meal times.

Quarterly Journal of Medicine, London

75: 235-410 (April) 1926

Pathologic Variations in Serum Calcium. G. H. Pervical and C. P. Stewart.—p. 235.
*Purgative Action of Magnesium Salts. H. Cohen.—p. 249.
Hydrogen-Ion Concentration and Some Other Properties of Blood from Two Cases of Autotoxic Enterogenous Cyanosis. J. Barcroft, H. Dryerre, J. C. Meakins, T. R. Parsons and W. Parsons.—p. 257.
Functional Pathology of Nephritis. E. B. Mayrs.—p. 273.
*Inheritance of Epilepsy. W. R. Brain.—p. 299.
Spasm of Tetany: Disturbance of Physiology of Muscle. J. P. Martin. —p. 311.
Early Accounts of Acholuric Jaundice and Subsequent History of Wilson's Patients. J. M. H. Campbell.—p. 323.
*Heredity in Acholuric Jaundice. J. M. H. Campbell and E. C. Warner. —p. 333.
Congenital Porphyrinuria. L. Mackey and A. E. Garrod.—p. 357.
Id. Associated with Hydroa Vacciniforme and Pigmentation of Teeth. H. T. Ashby.—p. 375.
Id. Associated with Hydroa Vacciniforme and Hirsuties. A. M. H. Gray.—p. 381.
Dextrose Tolerance Curve in Health. R. Hale-White and W. W. Payne. —p. 393.

Purgative Action of Magnesium Salts.—The observations made by Cohen are said to afford direct evidence that the purgative action of magnesium salts is exerted independently of the absorption of magnesium into the blood.

Inheritance of Epilepsy.—In a series of 200 epileptic patients, a family history of the disease has been found by Brain in 28 per cent, as compared with a figure probably under 10 per cent in a control series from a hospital population. The onset of the disease occurs in the first decade of life in a larger proportion of those with a family history of epilepsy than of those without such a history. There was a history of early convulsions in 28 per cent of 176 epileptic persons. Early convulsions were almost twice as common in epileptic persons with a family history of the disease as in those with none. Epileptic patients have been found to transmit the disease to about one in twenty of their offspring, but considering the probable error of the small numbers, little stress can be laid on this proportion. The proportion of first-born among epileptic persons is twice as high, and of second-born children half as high again, as in the section of the population from which the patients were drawn. It is suggested that the increased liability of first-born children to receive cerebral injury at birth is a factor likely to be responsible for the increased proportion of first-born among epileptic persons. The incidence of insanity among the relatives was found to be no higher than in the general population. The facts are held to indicate that a predisposition, which in at least 28 per cent of cases is inherited, is an etiologic factor in epilepsy.

Heredity in Acholuric Jaundice.—Campbell and Warner report on a family with a history of acholuric jaundice in five generations. The abnormal fragility of the red cells may occur without the other signs and symptoms of acholuric jaundice, both in ordinary cases after splenectomy and in latent cases. When due allowance is made for these, acholuric jaundice is inherited as a dominant mendelian character.

Archives des Maladies de l'App. Digestif, Paris

16: 393-512 (April) 1926

Mineral Balance in the Healthy and Diabetic. M. Labbé et al.—p. 393.
*Gastric and Pancreatic Achylia. A. Landau et al.—p. 409.
*Insulin in Fattening Treatment. F. Moutier.—p. 422.

Syndrome of Gastric plus Pancreatic Achylia.—In Landau, Cygielstrejch and Fejgin's four cases, gastric achylia was associated with pancreatic achylia; four others presented either gastric or pancreatic achylia. The absence of both gastric and pancreatic ferments was found in patients with pernicious anemia. Their data suggest that some still unknown factor may induce certain changes in the hematopoietic organs, influencing simultaneously the blood, the gastric mucosa and the pancreas tissue.

The Use of Insulin in Emaciation.—Moutier applied insulin in treatment of twenty-three abnormally thin persons, the leanness essential or acquired. The treatment failed in six; the results were good in nine. The gain of weight was from 0.5 to 1 Kg. in one week, to 4 or 7 Kg. in three months. The age of the patients ranged from 18 to 45. A dose of 5 units was injected twice a day before meals, for two weeks; then the dose was increased to 20, sometimes 30 units a day. The meals contained carbohydrates, in a proportion of 30 Gm. for 10 units of insulin. This was advantageously supplemented by keeping the patient systematically in bed. Small doses of insulin were continued for a long time.

Archives Franco-Belges de Chirurgie, Brussels

29: 1-80 (Jan.) 1926

Rickets with Osteoporosis. Grynfeltt and M. van Neck.—p. 1.
*Bone-Periosteum Implants in Pott's Disease. H. and Y. Delageniere.—p. 21.
Reconstruction of a Fractured Bone in Children. A. Marique.—p. 38.

Bone-Periosteum Implants in Pott's Disease.—The Delagenieres employed their method in three adults with tuberculous spondylitis. The induced ankylosis of the posterior vertebral arches soon restored the earning capacity. Paraplegia, cold abscess, excessive pain are indications for such interventions. Their bone-periosteum technic has the advantage over the Albee method that solid bone develops, reenforcing the spine.

Comptes Rendus de la Société de Biologie, Paris

94: 553-632 (March 12) 1926. Partial Index

Quantitative Test for Acetone. P. Fleury and I. J. Awad.—p. 570.
Gold Treatment of Syphilis. L. Fournier and P. Mollaret.—p. 576.
*Influence of Medulla on Glycemia. A. Tournade et al.—p. 582.
Postoperative Ketosis. M. Labbé and M. Chevki.—p. 590.
Postoperative Acidosis. M. Labbé and M. Chevki.—p. 591.
*Staphylococcus Vaccine in Typhoid. V. Bie.—p. 602.
*Experimental Pernicious Anemia. A. Nyfeldt.—p. 608.
*Foot and Mouth Disease Spread by Human Carriers. C. Kling and A. Höjer.—p. 618.
The Reticulo-Endothelial Tissue in Disease. E. Darzine.—p. 623.
*Heredity of Dupuytren's Contraction. G. Sprogis.—p. 631.

Hypoglycemia from Cocainization of the Medulla Oblongata.—Tournade and his co-workers introduced cocaine into the medulla oblongata of twelve dogs. This was followed by a decrease in the sugar content of the blood in all the animals. The experiment confirms that the medulla regulates the glycemia balance.

Staphylococcus Vaccine in Treatment of Typhoid.—Bie applied staphylococcus vaccine in fifty-one patients with grave paratyphoid fever. In thirty-nine, the results were good; in four, uncertain; in eight, negative. None of them died. The results were good in thirty-five of fifty-four cases of typhoid fever; dubious in three, negative in nine. Seven patients died. The vaccine did not influence associated pneumonia. It appeared that with the staphylococcus vaccine the course of the disease was shortened, and the death rate was correspondingly reduced.

Experimental Pernicious Anemia.—Nyfeldt induced pernicious anemia in seven of sixteen rabbits by injecting them intravenously with autolysates of various bacteria. The blood picture and histologic lesions were identical with those in pernicious anemia in man.

Spread of Foot and Mouth Disease in Cattle by Human Carriers of the Infection.—Kling and Höjer present evidence which apparently demonstrates that healthy human carriers of the infection or persons with the latent infection are responsible for the spread of this cattle disease. In 1924, the epizootic spread alarmingly in Sweden; by May, 1925, more than 4,000 herds had been infected, and the epizootic is not yet extinct. Their intensive and prolonged research has confirmed that the human carrier can harbor the virus for up to two months, and that the majority of human carriers acquire the virus from milk or from a human carrier. The virus on bare skin and clothing soon loses its virulence. Even in the vesicles, the virulence is lost in two or three days, but on human mucous membranes it may be long retained. In four of seven typical cases of foot and mouth disease in man, the serum displayed specific antibody action. Kling and Höjer established that a few human carriers in a populous center may be sources of infection for the surrounding country. The virus evidently becomes attenuated by passage from carrier to carrier. On the other hand, an intercurrent infection (influenza) or intoxication may rouse the latent virus to virulence.

Heredity of Dupuytren's Contraction.—Sprogis observed Dupuytren's contraction in seventeen of fifty-three persons, representing three generations of a family. Among them were only two women. Recurrences were frequent; the sclerosing process involved, besides the palmar fascia, also the digital nerves, connective tissue and skin.

Paris Médical

59: 461-488 (May 15) 1926

Cholecystectomy in Treatment of Gallstones. P. Mathieu.—p. 461.
Gaucher's Disease. P. Emile-Weil and P. Chevallier.—p. 463.
Insulin Treatment of Wasting Diabetes. J. Castaigne.—p. 473.
*Cancer of the Pancreas. P. Carnot and E. Libert.—p. 479.
*Tests for Bilirubin in the Urine. M. Garnier and H. Giroire.—p. 483.
Lambliasis of Duodenum or Gallbladder? Carnot and Gaehlinger.—p. 485.

Cancer of the Pancreas.—In Carnot and Libert's patient, aged 63, the affection developed in three stages; mild pain and dyspeptic disturbances occurred at the onset. The second stage presented an intensive and rebellious diarrhea. It was the predominant phenomenon, possibly due to lack of the inhibiting pancreatic ferments. Jaundice and cachexia appeared in the final stage. Necropsy revealed a canalicular cancer of the pancreas body, invading the pancreatic and the common bile ducts.

Tests for Bilirubin in the Urine.—Garnier and Giroire found by comparative research that the Grimbert test (barium chloride) appears to be tenfold more sensitive than the Gmelin test in detection of bilirubin in the urine. Certain urines did not respond with a positive Gmelin test even after bile had been added. A negative Gmelin test consequently does not testify to the absence of this bile pigment from the urine.

Presse Médicale, Paris

34: 593-608 (May 12) 1926

*Goiter and Mitral Insufficiency. M. Loeper and A. Mougeot.—p. 593.
*Thyroid and Peptone Shock. L. Garrelon and D. Santenoise.—p. 594.
Surgical Treatment of Mitral Stenosis. J. Sénèque.—p. 597.
Organization of Medical Department of Roumanian Army. Potarca and Dimitriu.—p. 603.

Goiter and Functional Mitral Insufficiency.—Loeper and Mougeot describe three of their five cases of mitral insufficiency in which symptoms of decompensation appeared simultaneously with enlargement of the thyroid. In three other cases, on the contrary, the goiter had preceded the dilatation of the left heart and mitral insufficiency. The heart phenomena may be explained mainly by compression of the right vagus and mechanical stimulation of the heart depressors by the encroaching enlargement of the thyroid. Compression of the vessels in the neck, especially of the carotid, is a further cooperating factor.

The Thyroid and Peptone Shock.—Garrelon and Santenoise conclude from their experiments on twenty dogs that the vagus seems able to stimulate the secretion of a thyroid substance which enhances the susceptibility of the organism to peptone shock.

34: 609-624 (May 15) 1926

*Pathologic Hatred in Families. H. Claude and G. Robin.—p. 609.
*Forms of Staphylococcemia. P. George and H. Giroire.—p. 611.
Differences in Potential as Affecting Biology. J. L. Pech.—p. 619.

Morbid Family Hatreds.—Claude and Robin discuss the medical aspect of this question, emphasizing the necessity for bearing in mind that the family environment is the reagent *par excellence* for the candidates for neuroses and psychoses at all ages of life.

Two Forms of Staphylococcus Septicemia.—George and Giroire specify two peculiar forms of staphylococcus septicemia, with a fatal issue in a few days. One presents a skin syndrome entailed by an infectious mitral endocarditis. This induces the formation of peripheral sloughing emboli, as well as embolism in the viscera. The origin of this staphylococcemia is seldom recognized. The other form, resembling erysipelas, is characterized by a patch of cyanosis over half of the face, covered with pustules. It usually follows a furuncle of the face. Necropsy shows numerous miliary abscesses scattered in the parenchyma of various organs, especially of the lungs and kidneys. Therapeutic measures, including vaccine, have all failed to date. They report the details of a case of each type.

Schweizerische medizinische Wochenschrift, Basel

56: 389-412 (May 1) 1926

Visualization of Bronchiectasis. R. Staehelin.—p. 389.
*Malaria Treatment of General Paralysis. O. Pfister.—p. 391.
*Sterility of the Emperor Augustus. L. Naegeli-Schubiger.—p. 393.

Malaria Treatment of General Paralysis.—Pfister confirms from Bleuler's clinic the good results of malaria treatment of general paralysis. Four of the thirty-six patients thus treated died, but only three of them from malaria. One of these had developed blackwater fever.

Sterility of the Emperor Augustus.—Naegeli-Schubiger asks why Augustus had no children except Julia (in his twenty-fifth year). It seems that he had not even illegitimate children in his numerous liaisons which he enjoyed while requiring exceptional moral purity from the court. The emperor was unable to ride a horse in his thirtieth year. It is probable that he had a gonorrhea with epididymitis. These diseases used to be kept as secret among the Romans as now.

56: 413-436 (May 8) 1926

*Senile Glaucoma. A. Vogt.—p. 413.
*Management of Placental Period. M. Wuhrmann.—p. 415.
Suture of Aneurysm. G. Streit.—p. 422.
Insulin in Treatment of Emaciation. H. Bodmer.—p. 423.
Pure Milk Diet. W. Eberding.—p. 424.

Senile Glaucoma.—Vogt observed with the slit lamp in some cases of chronic senile glaucoma a fine feltlike structure in the region of the pigmented edge of the pupil. He attributes it to a desquamation of the anterior part of the lens capsule. He is convinced that this is the direct or indirect cause of this type of glaucoma.

Management of Placental Period.—Wuhrmann's statistics on 500 cases of routine use of the Gabastou method of injection of a fluid into the placenta show that it has many disadvantages over expectant treatment. The duration of the third stage of labor as well as the amount of hemorrhage were increased. It should be applied as a routine procedure only in women in whom the expulsion of the placenta in previous pregnancies had not proceeded normally. Retention of the placenta remains, however, an indication for application of this method.

Brazil-Medico, Rio de Janeiro

1: 141-156 (March 13) 1926

*Modern Surgery. Americo Vallerio.—p. 141.
Recent French Medical Literature. Desaux and Troland.—p. 150.

Modern Surgery.—In this review of the artistry, the responsibility and the lights and shadows of the surgeon's life, Vallerio expatiates on the great future of physiologic surgery, and lauds Jonnesco, Leriche and Sauerbruch as the three high priests in this field. He credits Sir James Mackenzie's teachings with much of the progress of surgery in this century, but adds that *megalomania operatoria* has not been entirely eradicated. "It is worse than a crime, it is a blunder." He specifies Wertheim and Franz as having "forced the bistoury in too many cases between 1911 and 1913, with later prudence and remorse." F. Krause and Arbuthnot Lane, likewise, had to retrace their steps. The progress of surgery has abolished the terms "idiopathic," "essential" and "spontaneous" as the previously unsuspected spina bifida or other cause has been revealed. Brazil lacks the equipment for cooperative scientific constructive research by clinicians, surgeons, biologists and pathologists in a single institution, such as has been realized in North America (with 600 dogs at the disposal of the workers). Brazil is abreast with the best in respect to the spirit of observation, the manual skill and logical thinking of its leading surgeons. Physiologic surgery is opening up new possibilities for treatment and for prevention of valvular and lymphatic disease, etc. Periarterial sympathectomy needs to be studied from this standpoint instead of empirically.

Semana Médica, Buenos Aires

1: 585-636 (March 25) 1926

*Perianal Granuloma. A. A. Fernández.—p. 585.
*Prevention of Perineal Tears. L. G. Gret.—p. 600.
Pithiatic Nature of Nervous Phenomena on Puncture of the Pleura at Artificial Pneumothorax. M. Pozza.—p. 604.
*Ossification of the Eye. J. Lijó Pavia.—p. 606
Tuberculosis of Uterine Cervix. A. J. Pavlovsky.—p. 611.
*Solitary Neoplasm in the Lung. M. García Faure.—p. 617.
Welfare Work for Children. M. V. Carbonell.—p. 622.
Retrocecal Appendicular Phlegmon. J. G. Ruiz.—p. 625.
Endemic Malaria in Europe. G. Pittaluga.—p. 626.
Professional Guidance for College Graduates.—p. 629.
Relations Between Postencephalitic Conjugate Deviation of the Eyeballs and Hysteric Contracture. G. Marinesco.—p. 630.
Venous Pressure with Pulmonary Tuberculosis. Villaret and Martiny. —p. 632.

Perianal Granuloma.—Fernández found inclusions in and between the cells which seemed to be chlamydozoa, and with them he reproduced an ulcerating lesion in guinea-pigs. The affection in the young man was of two years' standing, but was cured at once by neo-arsphenamine treatment.

Prevention of Laceration of the Perineum at Childbirth.—Gret ascribes the lack of perineal tears in his obstetric practice to his care to prevent venous stasis in the region and to his training of the rectum to avert reflexes therefrom. He accomplishes this by keeping the woman after the seventh month on Mendez' colitis diet, and giving small enemas of oil, with laudanum, every third or fourth night and daily during the last nine or ten days. By this suppression of reflex action, and lack of venous stasis, the woman approaches delivery so well prepared that dilatation occurs almost without pain. He describes ten cases in detail to show the excellent results even in primiparas.

Ossification of the Eye.—Lijó Pavía has been able to find only two cases on record resembling the one he describes in which a traumatic injury of the eye was followed by ossification. In his case the injury had been a sensation as if an insect had crept under the lid. Four years later the enucleated eye showed not only formation of bone tissue but also of nerve tissue (glia).

Cancer of the Lung.—Two cases were encountered in Córdoba in the five years 1914-1919 and ten in the five years following. In two cases an inherited tendency was manifest. The lung cancers formed 9.7 per cent of the eighty-two cases of chronic lung disease that came to necropsy.

1: 637-688 (April 1) 1926

*Pulmonary Echinococcosis. J. J. Viton and J. A. Cruciani.—p. 637.
*Color Reaction Test for Aldehydes. J. A. Sánchez.—p. 640.
Serous Tenonitis. J. Lijó Pavía.—p. 642.
Reiteration of Scarlet Fever. Ramón Cucullu and A. J. Grosso.—p. 648.
Llama Immune Serum in Treatment of Syphilis. E. Pierangeli.—p. 654.
*Sterility in Women and the Rubin Test. J. C. Berri.—p. 657.
Treatment of Perforation and Cleft in the Palate. Crespi.—p. 666.
Sanocrysin in Treatment of Leprosy. J. J. Puente and Pierini.—p. 683.
Paris Green as a Mosquito Larvicide. L. W. Hackett.—p. 684.

Pneumothorax in Treatment of Suppurating Echinococcus Cysts in Lungs.—Viton and Cruciani report complete success from artificial pneumothorax in treatment of a patient with two hydatid cysts in the same lung, one of which had discharged with a vomica. The compression from the pneumothorax suppresses the intense toxic infectious focus, and in the case described, there was a gain of 8 Kg in weight by the tenth insufflation The pneumothorax also facilitates roentgenoscopic differentiation

Piperazine Test for Aldehydes and Lactic Acid.—Sánchez expatiates on the ease and simplicity of the test for various aldehydes, lactic acid and the oxy-ethyl group with a reagent consisting of a solution of 0 5 Gm. of piperazine in 10 cc. of a 1 per cent solution of sodium nitroprussiate. The tint changes to indigo blue with a positive reaction

Pertubation in Sterility.—Berri comments on the widespread application of the Rubin test in Argentina, and states that it has been often applied in his service in the last four years, with Rubin's technic. With impermeable tubes, he repeats the test two or three times, sometimes finding the previously impermeable tube freely patent at the later test. One woman with dysmenorrhea and impermeable tubes at the first test was found clinically normal later; the dysmenorrhea disappeared on repetition of the pertubation

Deutsches Archiv für klinische Medizin, Leipzig

151: 1-128 (April) 1926

*Pathology of Apoplexy K Westphal and R. Bär —p. 1
*Apoplexy from Clinical Standpoint K Westphal —p. 31
*Experimental Research on Apoplexy K Westphal —p 96
Blood Diastase Von Strasser —p 110

Pathology of Apoplexy.—Westphal and Bär confirm on sixteen cases of apoplexy (mostly from hemorrhage), Lowenfeldt's and Rosenblath's findings All the blood vessels (arteries, capillaries and veins) of the hemorrhagic focus present lesions amounting sometimes to complete necrosis. The bleeding occurs from all the vessels They do not regard miliary aneurysms as the cause of the hemorrhage. A simple bursting of a vessel does not explain the changes They believe that a sudden angiospastic or arteriosclerotic local anemia is primarily responsible The restitution of the flow in the artery entails the hemorrhage

Apoplexy from Clinical Standpoint.—Westphal shows that paroxysms of higher blood pressure are coincident with hemorrhages of the brain even in subjects with a comparatively low blood pressure He believes that cholesteremia sensitizes the arteries to spastic stimuli. Experiments on animals with anemia of the brain did not furnish enough explanation except for certain lesions of the blood vessels and diapedesis of erythrocytes. The changes in the blood vessels were more intense in the brain of a young woman who had been temporarily revived after a standstill of the heart and respiration lasting for fifteen minutes

Deutsche medizinische Wochenschrift, Berlin

52: 777 818 (May 7) 1926

Management of Operating Room Kappis —p 777 C'td
*Treatment of General Paralysis W Sagel —p 778
Allergic Diseases W. Misch —p 781.
Insulin and Phagocytosis G Bayer and O Form —p 784.
*Sugar in Cerebrospinal Fluid K. Hellmuth —p 785
Inapparent Experimental Syphilis W. Worms —p 785
*Nails and Endocrines J Heller —p 786
*Residual Nitrogen A Kowarski —p 790
Meinicke Test F Matzdorff —p 791
Multiple Skin Metastases J Severin —p. 792
Auscultation of Joints S Tannhauser.—p 793
Tubercles of Choroid J Gehrt —p 794
Artificial Sphincter Ani J Izquierdo —p 795
*Iodine in Hyperhidrosis M Andruszewski —p 795
Climacteric Disturbances O Wieden —p 796
Electric Pads Rosenburg Comment Alvensleben —p 796
Weninger's Tuberculosis Treatment H Grau —p 797.
Gallstones and Sex Organs B Molnar, Jr —p 798
Social Hygiene in Population Policy E. G Dresel —p 799.
Hygiene in Jugoslavia C M Hasselmann —p 801 C'cn
Scandinavian Literature in 1925 H Scholz —p 812. C'cn.
Italian Literature in 1925 H Jastrowitz —p. 813.

Treatment of General Paralysis.—Sagel inoculated paralysis patients with living cultures of spirochetes. He used the method only in those patients who had not been improved by inoculation with relapsing fever. He finds that the spirochetes had a favorable influence Only slight local reactions were observed.

Sugar in Cerebrospinal Fluid.—Hellmuth found no increase of dextrose in the cerebrospinal fluid in pregnancy nor in women with uterine myomas.

Nails and Endocrines.—Heller examined the nails in 562 patients with various grave endocrine diseases. He admits the possibility of endocrine disturbances in the nails in six or eight of these patients. He concludes that most of the reported changes of the nails are not existent or are in no relation to the endocrines. For instance, he found the trichophyton in the nails of a patient demonstrated as a case of abnormal fragility of the nails due to ovarian disturbance. He is also skeptical as to the whole of endocrine therapy in skin disease. The only improvement he obtained with it in psoriasis was in a little girl to whom he gave prostate tablets, because he happened to be out of thyroid tablets.

Residual Nitrogen.—Kowarski describes a simple method for determination of the residual nitrogen of the blood or the total nitrogen of the urine by direct nesslerization. He avoids the irritating vapors of the boiling sulphuric acid by conducting them through a tube into a concentrated solution of sodium hydroxide. The end of the tube is slanting and only two thirds of it are immersed, since the surface of the solution absorbs the gases sufficiently.

Iodine in Hyperhidrosis.—Andruszewski recommends an old treatment for hyperhidrosis: After a warm bath and a careful drying, he applies tincture of iodine to the feet and smears over it an ointment made with boracic acid 10 parts; glycerol 10; wax 20; liquid paraffin 20, and soft petrolatum, 50 parts. The procedure may be repeated after ten to twenty days. After this the ointment alone is used once a week.

Medizinische Klinik, Berlin

22: 715 754 (May 7) 1926

*Children's Food E Müller —p 715.
Conservative Gynecology W. Benthin —p 719
Pyloric Stenosis from Malformation. J. Schnitzler.—p 723
Autohemotherapy of Polyarthritis A. Sorter.—p 725
Coins in Esophagus C Springer.—p. 728.
*Rupture of Extensor Pollicis After Injury F. Honigmann —p 728.
Gonococcus Sepsis H. Deicher and A. Lechner.—p 731.
Chemotherapy of Syphilis. H. Grossmann —p 734.
Recent Works on Cardiovascular Disease E Edens —p 740
Clothing Hygiene. E Wiener —p 753

Children's Food.—Müller would abolish the conception of vitamins and substitute for it a few other hypotheses, especially that of an optimum molecular condition of the substances, analogous to the different forms of active and inactive iron and Liebig's law of the minimum He also points to a close relation between the mineral metabolism and avitaminoses.

Rupture of Extensor Pollicis After Injury.—Honigmann's patient fell on her left hand. Two months later she noticed suddenly that she was unable to flex her thumb This was due to a rupture of the tendon of the extensor pollicis longus at the distal edge of the transverse carpal ligament.

Monatsschrift für Geb. und Gynäkologie, Berlin

73: 1 128 (April) 1926

**Pregnancy After Implantation of Tube* F Unterberger —p 1.
*Long Interval in Twin Abortion G H Schneider —p 5.
Air Test of Placenta H. Franken —p 11.
Placenta Praevia P W. Siegel —p 18
Noninfected Abortions M. Gerstmann —p 29
Cesarean Section H v Broich.—p 32
Total Extirpation in Transverse Presentation W Odenthal —p 40.
"Forceps on Breech" B v Varo —p 46
Rupture of Uterus in Perforation Scar. W Vogel —p 51.
Injuries of Uterus W Reiprich —p 55
Time of Conception K. Volkmann —p 58
*Serum Structure and Menstruation H Eufinger and M Goldner —p. 62.
*Treatment of Gynatresia H Naujoks —p 68
Intraabdominal Hernia K Hennig —p 74.
Tubo Ovarian Pregnancy J. Batisweiler —p 77
Chocolate Cysts F Pischzek and P. Schmidt —p 83
*Industrial Occupation and Pregnancy E Martin —p 89

Pregnancy After Implantation of Tubes.—Unterberger reports normal conception and labor in a woman, aged 36, who had had impermeable tubes. He implanted them into the uterus

Long Interval in Twin Abortion.—The second twin in Schneider's case was aborted two months after the first. The woman had felt well in the meantime.

Serum Structure and Menstruation.—Eufinger and Goldner found that the percentage of globulins in the serum increases during menstruation (sometimes twofold), while the albumin decreases.

Treatment of Gynatresia.—Naujoks recommends vaginal procedure only in those cases of atresia which are not complicated by hematosalpinx. Fatal peritonitis resulted from the vaginal operation in both cases of the latter group thus treated at the Königsberg clinic.

Industrial Occupation and Pregnancy.—Martin has been retained by the textile factory employers to criticize a pending bill prohibiting the work of women in the last three months of pregnancy. He believes that the household duties are more strenuous than the work in the factory. The female organism is capable of coping with the former, and he refuses to consider factory work as injurious unless it is heavier. He says that if the factory work is too heavy, a man is ordered to help, which is an advantage over the household. Some of the factory work is done with the upper part of the body lying on a table; yet he thinks that the fetus is sufficiently protected by the amniotic fluid against any pressure. He admits that the work may entail some strain, but replies to this that a rest can also become quite an exertion. Mortality statistics with differences of 30 per cent in favor of housework may not mean much, according to him. If the blood circulation in the lower extremities is impaired, and a varicose tendency increased by standing, he wonders why it is not impaired during sleep, when the pillow holds the head higher. He agrees with his employers that the working women are sufficiently protected.

Münchener medizinische Wochenschrift, Munich

73: *765-808 (May 7) 1926*

Idiocy and Imbecility. W. Weygandt.—p. 765.
*Local Application of Chamomile. W. Arnold.—p. 767.
*Visceral Tuberculosis and the Skin. R. Wigand.—p. 769.
Quantitative Microtest for Dextrose. E. Kaufmann.—p. 771.
The Mastic-Protein Quotient. G. Wüllenweber.—p. 772.
Serologic Tests in Syphilitic Milk. P. Hackemann.—p. 773.
*Food Poisoning and Paratyphoid. M. Müller.—p. 774.
Paratyphoid from Horse Meat. Harms zum Spreckel.—p. 777.
*The Blood in Mexico. H. Eggers.—p. 779.
Goiter in East Asia. G. Kohler.—p. 781.
*Thoughts on Medicine. A. Bier.—p. 782. C'cn.
Balneotherapy and Climatotherapy. H. Weskott.—p. 788.

Local Application of Chamomile.—Arnold produced inflammation of the skin with mustard oil, light and tuberculin. These reactions could be inhibited by local application of an infusion of 5 Gm. of chamomile flowers in 100 Gm. of water. The ethereal oils seem to be the active substance.

Visceral Tuberculosis and the Skin.—Wigand found baldness only in 5 per cent of about 200 tuberculous men, and in these it had usually developed before the tuberculosis. The percentage of baldness is even lower than that of musicians (10 per cent). The average in healthy men after the third decade is 20 per cent; the maximum (in intellectual groups) 40 per cent. The poorer classes and bolshevists have plenty of hair. The other hairs of the body also grow well in the tuberculous, especially the eyelashes. Hair on the extremities is more common in tuberculous than in healthy women. Tuberculosis of the skin is rare in persons with tuberculosis of internal organs.

Food Poisoning and Paratyphoid.—Since the etiology of food ("ptomaine") poisoning is now cleared up, Müller suggests to avoid the term. Most of it is due to paratyphoid and other bacteremias of the slaughtered animals. Part of it is due to contamination of the meat by the same group or other microbes, such as the botulinum.

The Blood in Mexico.—Eggers found a high percentage of hemoglobin (115 in men, 97 in women) and of the number of erythrocytes (7,351 millions in men and 7,149 in women) in Mexico City (altitude, 2,250 meters). The number of leukocytes is low.

Thoughts on Medicine.—Bier returns to the 145 year old irritation theory which had been proposed by J. Brown, and unites it with the Hippocratic principle of the self-help of the organism. He believes that mathematics have completely failed in medicine except in the figuring of refraction anomalies—and even in this, they furnish only a substitution treatment. The mechanics of joints play no rôle at all. Joints resected without any regard to theoretical conceptions frequently give fine results. The outcome is still better if no surgical intervention interferes with the healing.

Wiener klinische Wochenschrift, Vienna

39: *521-560 (May 6) 1926*

*Callous Ulcer of the Rectum. J. Hochenegg.—p. 522.
*Traumatic Degeneration in the Spinal Cord. H. Steindl.—p. 524.
*Noma and Its Treatment. F. Kaspar.—p. 528.
*Ramicectomy. F. Mandl.—p. 531.
A Multilocular Cyst of the Kidney. K. Haslinger.—p. 534.
*Phlegmonous Gastritis. F. Stöhr.—p. 535.
*A Case of Lipoma of the Stomach. W. Spitzmüller.—p. 538.
*Compensatory Closure of the Esophagus. J. Palugyay.—p. 540.
*So-Called "Bleeding Nipple." E. Risak.—p. 544.
Toxic Action of Hypertonic Solutions. F. Fuchs.—p. 546.
Carcinoma of the Rectum. C. Ewald. Supplement.—pp. 1-20.

Ulcer of the Rectum.—Hochenegg reports five patients operated on by colostomy for supposed carcinoma of the rectum, who became completely well. In one the colostomy dates back twenty-one years. Digital and rectoscopic examination showed entire disappearance of the lesions. In two the artificial anus was thereupon closed. Hochenegg designates the lesion present in these cases callous ulcer of the rectum, and holds it to be an inflammatory swelling analogous to callous ulcer of the stomach. Differential diagnosis from carcinoma is impossible except by biopsy, which is itself unreliable in rectal tumor. He therefore performs colostomy in all doubtful cases and reexamines the patient after a few months. The favorable influence of the permanent artificial anus on callous ulcer is explained by removal of the irritation kept up by fecal masses accumulated above the stenosis and pressing through it. The five cases here reported were found among 511 colostomies.

The Question of Traumatic Degenerative Changes in the Spinal Cord.—Steindl reports a case of lesion of the spinal cord caused by a fall in a man, aged 27. Death took place four or five months after the injury. Microscopic examination of sections of the cord showed in the cervical segment areas of destruction of the nervous elements, and in the thoracic and lumbar segments extensive changes in the descending tracts; few nerve fiber strands stained normally in either the ascending or descending tracts. The glia was unchanged; there were no signs of earlier hemorrhage. Concussion of the spinal cord, injuring only the more delicate elements, was probably the cause.

Noma and Its Treatment.—Kaspar used locally a solution of copper sulphate with astonishing success in an advanced case of noma of the face in a woman, aged 62.

The Surgical Destruction of the Rami Communicantes in Gastric Crises of Tabetics.—Mandl reports six cases, and believes this operation to be a success. He operates, when possible, on both sides at one sitting and prefers local anesthesia. He extirpates the rami communicantes, drawing out with them the sympathetic plexuses. Atony of the stomach does not follow the operation. The motor type of crises seems the most promising for this treatment.

Phlegmonous Gastritis.—Stöhr reports that there have been two cases of this rare condition in Hochenegg's clinic in the last twenty years. Both patients were women, the first 40, the second 74 years old. In the first the esophagus as well as the stomach (pyloric portion) was involved and, from the sites of the lesions, a traumatic origin, from swallowing a foreign body, seems probable. In the second a needle was found at necropsy penetrating the stomach wall. Operation was unavailing in these cases, but recent literature shows some successes in the surgical treatment of this grave condition.

Lipoma of the Stomach.—Spitzmüller reports a case of submucous lipoma of the stomach, 20 cm. long, 27 cm. in circumference, more than three times the size of the largest hitherto reported. The tumor had been palpable and the patient had suffered from pain, increasing in severity, for the past six months. After resection of the stomach, two ulcers were found in the mucous membrane overlying the tumor.

Compensatory Closure of Esophagus in Dysfunction of the Cardia.—Palugyay observed spasm of the esophagus accompanying lessened contractile power of the cardia. In one case the dysfunction of the cardia was from early carcinoma, in another from surgical intervention. He believes the esophageal spasm to be a reflex of compensatory nature.

The So-Called "Bleeding Nipple."—Risak reports two cases, one in a man, of occasional discharge from the nipple proceeding from papilloma of a milk duct. In the woman, the discharge began shortly before the onset of menstruation and became tinged with blood.

Zeitschrift für Urologie, Leipzig

20: 241-320, 1926

*Gonorrheal Cowperitis. I. F. Schischow and N. A. Smirnow.—p. 241.
Suture of Vas Deferens. E. Gohrbandt.—p. 247.
*Aspirator Extirpation of Vesical Papillomas. R. Born.—p. 250.
Development of Urology Since 1906. A. Rothschild.—p. 255.
Vesical Calculi in Diverticula. K. Lion.—p. 263.
Causes of Inertia of the Ureter. D. Wedenski.—p. 275.
Solid Tumors of Epididymis. S. Rubaschow.—p. 290.
Asepsis in Bladder Interventions. Vogel.—p. 297.

Chronic Gonorrheal Inflammation of Cowper's Glands.—This communication from Moscow states that cowperitis was found in 12.2 per cent of 200 cases of chronic gonorrhea. It is evidently one of the main causes of the refractory nature of gonorrhea. The inflammatory process in the glands can be detected by combined palpation through rectum and perineum. Perutz' method of provocation with pilocarpine in the anterior urethra may aid in the diagnosis.

Extirpation of Bladder Papillomas by Aspiration.—Born crushed some calculi in the bladder and evacuated the fragments with an aspirator. To his surprise, he found fragments of a previously diagnosed large papilloma among the débris thus evacuated. He then applied the evacuating catheter directly to the papilloma, and aspirated until no further scraps could be obtained. The bleeding was slight. A few days later he obliterated the stump of the tumor with electrocoagulation. In a second case the aspirator was applied to the papilloma at once, and only one minute was required for its evacuation in small scraps. The fluid in the bladder was only slightly tinged with pink, and the man started the same day on a business trip. The stump was cauterized a week later.

Zentralblatt für Chirurgie, Leipzig

53: 1105-1168 (May 1) 1926

*Ligation of External Carotid Artery. H. Herfarth.—p. 1106.
*Biologic Treatment of Peritonitis. F. Kuhn.—p. 1108.
*Periarterial Sympathectomy with Tubulization. M. Saidmann.—p. 1112.
*Anomaly of Position of the Appendix. H. Köhler.—p. 1115.
*Hydronephrosis of Half of Double Kidney. A. Hübner.—p. 1117.
A Case of Hermaphroditism. E. Birt.—p. 1121.
Juxtavesical Incarcerated Hernia. N. Belu.—p. 1124.
"New Points of View in Arthroplasty." S. Kotmann.—p. 1125.

Preliminary Ligation of the External Carotid Artery.—Herfarth calls attention to the danger of thrombosis and secondary embolism following ligation of the external carotid artery. Although this complication is rare and should not constitute a contraindication in serious cases, it should be borne in mind in judging the indications for the procedure. As a precautionary measure against danger from the small "physiological thrombus" at the site of ligation, he recommends placing the ligature as far as possible distal to the point where the superior thyroid artery branches off.

The Biologic Treatment of Diffuse Suppurative Peritonitis.—Kuhn advocates the use of sugar syrup in the toilet of the abdominal cavity in suppurative peritonitis. It encourages secretion, checks the activity and the formation of alkaline toxins, and opposes the forming of adhesions. The abdominal cavity should be completely filled with the syrup, and large drains should be inserted to take care of the abundant secretion which will ensue.

Periarterial Sympathectomy with Tubulization.—Saidmann enveloped the sympathectomized arteries of dogs with segments of vein as a measure to guard against hemorrhage from the weakened arterial wall. The operation was successful in all his eighteen experiments. The tubulization effected immediate cessation of bleeding in those experiments in which he purposely punctured the vein. The death from hemorrhage fifteen days after operation of a dog sympathectomized on the femoral artery, without tubulization, showed that removal of the adventitia is not an operation without danger; in this instance, both accidental perforation and infection could be ruled out.

A Rare Anomaly of Position of the Appendix.—In operation on a case of appendicitis, Köhler found the vermiform appendix proceeding from the ileum 2 cm. behind Bauhin's valve. A very few such cases are recorded. Köhler suggests that a developmental disturbance by which the pouch from which the cecum and appendix develop became displaced from the anterior to the posterior limb of the embryonic middle intestine could explain the position of the appendix behind Bauhin's valve.

Hydronephrosis of One Half of a Double Kidney—Hübner reports a case of infected hydronephrosis in the upper half of a double kidney situated on the right side in an 11 year old boy. On excision, the kidney was found to have two distinct pelves with separate ureters; the ureter belonging to the upper half was obliterated. Cystoscopy had revealed but two ureteral openings. Diagnosis of duplication of pelvis and ureter is not easily made; excision of the entire organ in such a case is preferable to resection of the diseased half.

Zentralblatt für Gynäkologie, Leipzig

50: 1105-1168 (April 24) 1926

Sacral Sarcoma in Pregnancy. L. Lederer.—p. 1106.
Gwathmey's Synergistic Analgesia. A. Ecke and R. Taubert.—p. 1111.
*Morphine in Labor. O. Aufermann.—p. 1124.
*Anesthesia in Abortion. P. Gellert.—p. 1127.
Provocation of Labor. F. Stähler.—p. 1130.
Hemorrhage with Insertio Velamentosa. G. Frommolt.—p. 1131.
Rupture of Uterus in Fourth Month. P. Schugt.—p. 1135.
Surgery of Prolapse and Retroflexion. G. Halter.—p. 1141.
*Extra-Uterine Pregnancy. W. Liebe.—p. 1150.
Fatal Impalement. K. Burger.—p. 1160.

Morphine in Labor.—Aufermann injected intravenously 0.02 Gm. of morphine in over 100 parturient women. The action lasts for two and a half to three hours. If the pains become weaker, pituitary preparations may be added.

Anesthesia in Abortion.—Gellert draws the cervix slightly down and to the side, and injects 10 cc. of a 1 per cent solution of procaine (with addition of epinephrine) into each side of the uterus. The needle is inserted at the junction of the cervix and vagina, to a depth of 1-2 cm. It is necessary to aspirate first to avoid the possibility of intravenous injection. He limits this method to subfebrile or noninfected women. The dilation of the cervix then becomes painless and easy, while the tonus of the body of the uterus is not impaired.

Extra-Uterine Pregnancy.—In patients who are not in an evidently dangerous condition, Liebe recommends to reenforce a doubtful diagnosis by repeated determination of the blood pressure and hemoglobin percentage, which may indicate a hemorrhage. The sedimentation test and the leukocyte-erythrocyte ratio may give further hints.

50: 1169-1232 (May 1) 1926

Congenital Para-Urethral Cyst. B. Ottow.—p. 1170.
Urethroplasty. K. v. Lehoczky-Semmelweis.—p. 1175.
Vesicovaginal Fistula. R. Freund.—p. 1177.
Pedunculated Fibromyxoma of Bladder. A. Saturski.—p. 1180.
Postoperative Ischuria. O. Gragert.—p. 1187.
*Methenamine By-Effects. O. Gragert.—p. 1195.
*Injury from Cystography. B. Ottow.—p. 1199.
Gangrenous Dissecting Cystitis. F. Lemperg.—p. 1203.
Puerperal Gangrenous Cystitis. M. Karlin.—p. 1205.
"Ureter Forceps." H. Küstner.—p. 1209.
*The Ureters in Pregnancy. G. Frommelt.—p. 1210.

Methenamine By-Effects.—Gragert observed hemorrhagic cystitis with grave tenesmus in two women after intravenous administration of a 40 per cent solution of methenamine in doses of 10 and 5 cc., respectively. A third woman, who had angioneurotic symptoms, reacted with considerable hematuria and tenesmus to three 0.5 Gm. doses of the drug taken by the mouth within twenty-four hours.

Injury from Cystography.—Ottow observed a pseudomembranous cystitis with necrosis of the mucous membrane after injection of a 25 per cent solution of sodium bromide for roentgenographic purposes.

The Ureters in Pregnancy.—Frommolt's experiments exclude the possibility of a disturbance of the closing mechanism between the bladder and ureter in the pathogenesis of dilatation of the ureter in pregnancy.

Grèce Médicale, Athens

28: 9-16 (April) 1926

*Blackwater Fever in Greece. J. P. Cardamatis.—p. 9.
A Typhoid Epidemic in Greece. N. A. Eustathianos.—p. 14.

Blackwater Fever.—Cardamatis has been insisting since 1893 that malaria is not responsible for bilious fever with hemoglobinuria, and that the destruction of the erythrocytes *occurs in the liver rather* than in the blood stream. It belongs in the acquired hemolytic jaundice group, probably of spirochetal origin. The spleen and kidneys may or may not cooperate. The disease which clinically resembles it most is yellow fever. Treatment must avoid quinine and apply measures known to be effectual against spirochetes. Muñoz reported in 1920 the cure in five grave cases under intravenous injection of mercuric cyanide. Others have reported similar experiences since, and Cardamatis adds another grave case to the list, with prompt recovery after three intravenous injections of 0.01 Gm. of mercuric cyanide in five days. The young man had a *history of malaria.*

Mediko-Biologitchesky Jurnal, Moscow

4: 3-133, 1926

Experimental Polyuria. E. Sharpey-Shafer.—p. 12.
Automatic Contractions of Arteries. A. Titaeff.—p. 22.
Pathology of Leydig's Cells. Z. Morgenstern.—p. 29.
*Effect of Removal of the Pituitary. S. Arkhangelsky.—p. 38.
Liver Function with Endocrine Insufficiency. A. Trynkin.—p. 48.
Distant Reflexes from the Prostate. V. Ilynsky.—p. 52.
Asymmetric Phenomena in the Involuntary System. M. Sereisky et al. —p. 63.
Reflexes of the Involuntary System. I. Jakovleva and G. Freidovitch. —*p.* 78.
*Electrolytes and Saliva Secretion. D. Alpern.—p. 93.
The Reflexes with Strychnine Poisoning of the Spinal Cord. I. Beritoff and O. Nivinskaia.—p. 108.
The Vegetative Centers in Epidemic Encephalitis. M. Ammosoff.—p. 118.

Effect of Removal of the Pituitary.—In Arkhangelsky's experiments on twenty-five dogs, after removal of the anterior lobe or the whole of the pituitary body, the animals survived for a year and even longer. Growth and sexual maturity seemed retarded. The temperature declined, the assimilation of carbohydrates was enhanced, and the eosinophils increased in the blood. Adiposis was manifest (characteristically localized in the kidney region and pelvis); also fatty degeneration of the liver, and histologic changes in the thyroid and suprarenals indicating exaggerated functioning. Polyuria was not constant.

Electrolytes and Nerve Mechanism of Saliva Secretion.—Alpern found that the calcium content of the saliva was reduced after extirpation of the sympathetic nerve. Severing first the chorda tympani, then the sympathetic, induced decrease of calcium and increase of potassium in the saliva. The same was observed with poisons acting on the sympathetic. *Poisons* for the parasympathetic, and severing the chorda tympani failed to modify the amount of calcium. The sympathetic seems to influence the electrolyte composition of the saliva, that is, it modifies the gland cells. Hence, it may be considered a trophic nerve, acting on the functioning of cell protoplasma.

Finska Läkaresällskapets Handlingar, Helsingfors

68: 305-396 (April) 1926

**Biologic Action* of Roentgen Rays. G. Jansson.—p. 305.
*Tetany as Cause of Gastric Colic. F. Langenskiöld.—p. 324.
*Seasickness. F. Leiri.—p. 343.
*Infectious Pyelonephritis. *B. Runeberg.—p. 357.*
The Wassermann Reaction During and After Treatment with Insoluble Mercury Salts. C. Thesleff.—p. 373.

Biologic Action of Roentgen Rays.—*Jansson found* that the temperature had a marked influence on the biologic action of the roentgen rays as studied with *the darkfield microscope,* low temperatures depressing the vitality of the *cells.* He was able to trace the changes induced in the cells *from* the slightest injury to complete devitalization of the cell. Nothing was observed that sustained Dessauer's heat-point theory. On the *other hand,* Pordes' theory that the roentgen rays inflict an ultramicromechanical injury on the *building* stones of the living substance has gained in credibility.

Tetany as Responsible for Gastric Pains.—Langenskiöld calls attention to the unsuspected frequency of latent tetany in adults as the primary disturbance responsible for pain in the stomach. In five cases of spasms of pain in the stomach region, *tetany* was *manifest,* and ten others presented symptoms *generally* accepted as pathognomonic of tetany. On the other *hand, he never* found anything suggesting tetany in the thirty-four healthy persons tested, nor in persons with organic *stomach lesions,* except when the conditions were such as are known to invite tetany. A chart groups the test findings in 105 subjects, showing that tetany is comparatively common in Finland, and that its main manifestations are visceral.

Seasickness.—Leiri regards atropine as the most effectual remedy for *seasickness. It paralyzes the* parasympathetic and thus prevents the reflex action from the vestibule which is started and maintained by the unusual movements of the ship. He *explains why epinephrine* has to be given with it.

Infectious Pyelonephritis.—Runeberg insists on absolute repose in bed as indispensable, and until a week or two after the temperature has returned to normal. He has the patient drink up to 3 liters of fluid each day; alkaline mineral waters and milk only in moderate amounts. While there is fever, protein and salt should be avoided.

Hospitalstidende, Copenhagen

69: *289-312 (April 1) 1926*

*Bacteriology of the Bile. S. Hansen.—p. 289.
*Irradiated Cod Liver Oil. S. F. Nielsen.—p. 300.

The Bacteriology of the Bile.—*Hansen took cultures from* the bile at 157 necropsies, regardless of the terminal illness. Bacteriologic examination was positive in 41.4 per cent, and the bile was infectious in 42.5 per cent of the gallstone operation cases. The younger stones were found mostly in the healthy gallbladder, with sterile bile, which seems to discredit the assumption of infection as necessary to stone formation. The older stones were in pathologic gallbladders with infected bile, indicating that the infection was secondary.

Irradiated Cod Liver Oil.—Nielsen failed to confirm Malmstrøm's statements in regard to irradiated cod liver oil.

69: *337-364 (April 15) 1926*

**Intravenous Sugar Tests.* S. *Jørgensen.*—p. *337.*
The Blood Picture with Enlargement of the Prostate. O. Bouet and V. Eskelund.—p. 351.
Necrosis Adiposa Neonatorum. G. Gelbjerg-Hansen.—p. 357.

Comparative Study of Blood Sugar.—*Jørgensen* tabulates the data from six patients, kept in bed and given in turn intravenous injections of 5 Gm. of glucose, levulose and galactose. It seemed to be impossible to discover any common standpoint from which the blood sugar percentages afterward could be compared with each other, the curves were so widely divergent.

Ugeskrift for Læger, Copenhagen

88: 389-408 (April 22) 1926

*Fractional Analysis of Stomach Content. K. Faber et al.—p. 389.
*Calculi in the Pancreas. E. Holm.—p. 398.
"Cerebrospinal Fluid with Brain Abscess." R. Lund.—p. 401.

Fractional Analysis of Stomach Contents.—Faber, Holst and *Norgaard tabulate* the results of fractional analysis of the stomach contents in 159 patients, mostly with digestive disturbances. Only in exceptional cases was the fractional technic more instructive than the ordinary Ewald test meal method, for estimating secretion of hydrochloric acid.

Calculi in the Pancreas.—At necropsy of a man, aged 49, who had died in diabetic coma, a year after *the first* symptoms of diabetes, the pancreas was found partly calcified, studded with nodules containing concretions. Its duct was crowded with small white calculi. They differed from gallstones in that they were not faceted, and *did not contain* bilirubin except when long impacted where bile *could* reach them. There are sixteen cases on record in which a pancreas calculus was removed by an operation, with eleven recoveries.

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INFANT FEEDING [*]

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There is no question but that the laity is demanding of the general practitioner a more definite and extended knowledge of infant feeding than he is able to supply at the present time. My object in this paper is to decide whether such bewilderment as at present exists in the minds of the profession is justifiable from the standpoint of facts. In other words, is not every practitioner equipped to feed babies properly if he will use the means at his disposal, and a fair amount of common sense?

What have we, as pediatricians, done to help him in this matter, and how far have the publications of men eminent in the profession gone toward increasing rather than reducing this bewilderment? If one takes up a pediatric journal of the last ten years and looks at the articles on infant feeding one will certainly be impressed, not by the simplicity, but by the complexity of this branch of medical science. Do the facts really justify this complexity, or is the problem far simpler?

Again, in all our medical publications, and especially in those devoted to children's diseases, we find proprietary foods heralded. Full page advertising is given, unquestioningly in the majority of instances, to perfectly true statements, but statements which are true not only of the proprietary foods mentioned, but probably of many other foods which are perfectly simple and much more easily obtained. If we review the literature we find repeated attempts to obtain a food other than breast milk, the composition of which will be perfectly satisfactory for all babies of all ages. Such a food has never, up to the present time, been fabricated, and it is fair to assume that such a one never will be.

With these ideas as a background, a survey was made of the children under 1 year of age in the Infant Welfare Society of Chicago. That society, in connection with the stations of the Chicago Board of Health, covers the poorer districts of the city quite completely. The work of the two is about equally divided, and since the Infant Welfare Society was in the field first, the poorest districts are covered by its stations. There are twenty-five stations, and they take care of populations of all nationalities and colors.

Within the last year the Infant Welfare Society determined to look after only charity cases, so that we cannot regard the clientele of this society as a picked clientele. Certainly the conditions under which these people live cannot be compared favorably with those of the individuals served by any practitioner of medicine.

The conduct of the work is as follows: All babies born to mothers of the district in which the station functions are reported to the Infant Welfare Society, and by the society to its representatives in the districts. The nurse makes a home call, to determine whether the case is one financially fitted for care by the Infant Welfare Society. If the mother has not a physician of her own, the child is then invited to come to the Infant Welfare Society station. At the station the child is examined by a physician, and advice as to feeding is given. The nurse then goes into the home at least twice a month to see that the instructions are carried out, that the child is properly cared for, and that the home conditions are the best that can be obtained under the circumstances.

Now, who are these physicians who give advice and care to the babies? There is a rule in the Infant Welfare Society that no physician shall have a station for longer than two years. Some of them stay no longer than one year. The exceptions to this rule are in two or three stations where physicians are employed in teaching medical students or applicants for stations. The men employed in the work are practically all young men just leaving hospitals, who have had no special equipment for this work, but most of them are especially interested in pediatrics. Each one is encouraged and urged to use the simplest formulas possible to carry on the work, but there are no iron-clad rules that hamper him in the free use of his judgment. He is not expected to experiment, however.

The object of the society is to "keep the well baby well," and keep him healthy throughout his babyhood. Nothing is done that will in any way, so far as we know, interfere with this work. Breast nursing is urged as a prime object of the task of the Infant Welfare Society. When it is not possible to give the child breast milk, or when the supply is insufficient to meet its needs, the simplest formulas are used.

The next question that arises is, What do we mean by "simple formulas?" By simple formulas we characterize those foods which are obtainable by every one, in every place. To be specific, we mean cow's milk, water, cane sugar, cereals (principally cream of wheat and farina), and vegetables, especially spinach. Orange juice or tomato juice, and cod liver oil are given to practically all babies. It is a policy of the society not to use proprietary foods, except when especially demanded, and to use special foods, such as lactic acid milk and protein milk, only when the case seems to require them. As a rule, the cow's milk used is boiled from three to five minutes.

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[*] Chairman's address, read before the Section on Diseases of Children at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

We are therefore in a position to say to the general practitioner that the conditions under which the Infant Welfare Society functions are no better than those under which his patients live, with the single and important exception of the nursing element.

The survey mentioned previously was taken, March 31, 1926, and included all the children under 1 year of age under the care of the twenty-five stations of the Infant Welfare Society at that time. This survey consisted of the tabulation of all these children as to age and food, and the following statistics are presented:

There was a total registration on that date of 3,293 children under 1 year of age, of whom 1,531 were under 6 months. Of those children under 1 year, 876, or 26.55 per cent, were fed exclusively on the breast. Of those on breast and mixed feeding there were 2,360, or 71.5 per cent. When we consider that the regular policy is to take children off the breast at 9 months, it might be well to make the survey of those in the first six months of life. Of these we find 809, or 52.87 per cent, exclusively on the breast, while 1,334, or 87.2 per cent, are either exclusively breast fed or on mixed feedings.

It is interesting to note the distribution of these children in regard to the variation in the mixed feeding, which is shown by table 1.

Table 1.—*Breast Feeding*

	Under One Year		Under Six Months	
	Number	Per Cent	Number	Per Cent
Total number of cases	3,293	.....	1,531	.....
Breast exclusively	876	26.55	809	52.87
Breast + cereal	470	14.24	219	14.38
Breast + cereal + vegetable	461	13.97	7	0.46
Breast + vegetable	1	.03	0	0
Breast + regular formula	225	6.82	211	13.79
Breast + reg. form. + cereal	128	3.88	55	3.59
Breast + reg. form. + cer. + veg.	162	4.91	1	.07
Breast + special formula	34	1.03	32	.97
Breast + spec. form. + cer. + veg.	3	.10	0	.0

It is seen from this table that while cereal alone was given as an adjuvant feeding quite freely before 6 months, vegetables were practically not given at all. A careful survey of the statistics, which need not be included here, shows a progressive increase in the use of cereal beginning at 3 months of age, reaching its peak at 7 months, and after that declining. Vegetables, which are only occasionally used before 6 months, from the eighth month on are used with increasing frequency. Special formulas, which will be taken up later, were used in only thirty-seven cases. Twelve babies were taken off the breast because of the following difficulties: On the part of the mother, insanity, two cases; heart disease, two cases; diabetes, one case; breast abscess, two cases; illness, not otherwise defined, two cases. On the part of the child, refusal of the breast, two cases. With the exception of the cases just noted, it was not necessary to remove children from the breast except for failure of supply of breast milk.

Of the artificially fed babies there were 932, or 28.5 per cent. These were divided as indicated in table 2.

It is seen from this that most of the children artificially fed received either cereal or vegetable, or both. This is largely to be accounted for by the fact that most of the children who were fed artificially were 6 months old or older.

We come now to the consideration of the children on special formulas. Of these there are thirty-seven on mixed feeding, and eigthy-eight artificially fed, making a total of 125. We may divide these into three separate categories: First, those in which there was substitute for cane sugar, in whole or in part, some other sugar. This constitutes the bulk of the cases. Second, those who were fed on some patented infant food—a vary small number, and, third, those who were fed on some approved form of infant food, notably albumin milk or lactic acid milk (table 3).

While the original figures indicate that special formulas were used in 125 cases, or 3.8 per cent, of the total number of cases, we find on closer inspection that in 106 of these (two duplicates, referring to carbohydrates used in conjunction with albumin milk and lactic acid milk) the change was merely in the carbohydrate content, and consisted in all but four cases in the substitution of some other form of sugar for cane sugar. In the other four cases, three children were fed cereal paste for vomiting, presumably on the basis of pylorospasm, and one was given rice water for diarrhea. There were only seven children on patented foods. Of these, one was fed Dryco, which is simply powdered milk; two were given Casec for colic, and the other four were on foods of which the society does not approve, and had been under its care only a relatively short time. There were twelve cases in which it was deemed necessary to resort to acid milks. As a matter of fact, these twelve represent practically the only children who were on really special formulas. That is, only one child in 300 had to have some special form of feeding to meet its demands.

Table 2.—*Artificial Feeding*

	Under One Year	
	Number	Per Cent
Total number of cases	3,293	....
Regular formula	125	3.79
Regular formula + cereal	242	7.64
Regular formula + cereal + vegetable	459	13.91
Whole milk + cereal + vegetable	18	0.55
Special formula	42	1.27
Special formula + cereal	26	0.79
Special formula + cereal + vegetable	20	0.61
Total number artificially fed	932	28.5

Table 3.—*Special Formulas*

Total cases	125	
Substituted carbohydrate	108	(two duplicates)
Dextrimaltose no 1	95	
Dextrimaltose no. 3	3	
Lactose	1	
Malt soup	1	
Karo	3	(one duplicate)
Mellin's Food	1	(one duplicate)
Cereal paste	3	
Rice water	1	
Patented foods	7	
Dryco	1	
Horlick's Malted Milk	2	
Condensed milk	2	
Casec	2	
Acid milks	12	(two duplicates)
Albumin milk	5	(one duplicate)
Lactic acid milk	7	(one duplicate)

If we reiterate, we find that the children on special diet constitute an extremely small proportion of the children fed by the Infant Welfare Society of Chicago. Twelve children, or approximately one in 300, had to have acid milk feedings. Four children, or approximately one in 800, were given foods which are purported to be complete (with the addition of water) but which do not meet with the general approval of the medical profession. Three others were given patented foods of a special nature to meet special conditions. Of those instances in which carbohydrate change was necessary, this change consisted in all but four cases in the substitution of some other form of sugar for sucrose. In those four cases, three children had cereal paste for vomiting and one received rice water for diarrhea. Only nine children were in hospitals at the time of the survey.

SUMMARY

1. Of 3,293 children under 1 year of age under the care of the Infant Welfare Society of Chicago, 26.55 per cent were exclusively breast fed, and 71.5 per cent were exclusively or partially breast fed.
2. Of 1,531 children under 6 months of age, over half were exclusively, and seven eighths were exclusively or partially breast fed.
3. Only twelve babies had to be weaned for causes other than failure of milk supply before the 9 months period.
4. Cereals and vegetables were extensively used, both as adjuvants to breast milk, and as part of the food given to those wholly artificially fed.
5. Except for the substitution of some other sugar for sucrose, special formulas were used in only twenty-three cases, and acid milks were employed in only twelve of these.
6. In spite of a severe respiratory epidemic, only nine babies were in hospitals at the time of this survey.

CONCLUSIONS

1. Seven out of eight babies under 6 months of age can be fed in whole or in part on the breast.
2. Cereals and vegetables can be used to advantage in feeding infants in the second six months of life.
3. Acid milks are necessary in only one in 300 cases of infant feeding.
4. It may be necessary to substitute for cane sugar some other form of sugar in less than 10 per cent of artificially fed babies.
5. There is probably no advantage whatever in the use of proprietary infant foods, and practically no indication for their use.

310 South Michigan Avenue.

General Practitioner Consultant of Future.—Most of the consultants of the future will be found among the so-called rank and file of the profession; in other words, among the more capable and experienced general practitioners, while the consultant of today will continue to be he who undertakes to treat by mechanical skill and other therapeutic and technical means such advanced conditions as preventive measures have failed to check. The hospital surgeon of today is largely employed in performing major operations—abdominal, pelvic, thoracic, cerebral, etc. So much is this the case that his knowledge of disease and its treatment is practically limited to its advanced stages, and such initial symptoms as may have preceded the later developments he will only glean indirectly from the history of the case. But information thus obtained cannot compare in diagnostic importance with knowledge derived from actual observation and investigation, the special opportunities alone afforded the family doctor in his daily visits. It is for this reason that I venture to maintain that it is not the hospital surgeon or physician who will best fulfil the functions of consultant in the matter of early diagnosis and prevention of disease, but the capable and experienced general practitioner who will already have been brought face to face with symptoms that he has learnt to know are the forerunners of more serious complications.—Maylard, A. E.: *Glasgow M. J.* **23**:417 (June) 1926.

NONTUBERCULOUS PERIBRONCHITIS SIMULATING OCCULT TUBERCULOSIS *

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Despite the very considerable literature that has appeared on the subject of the so-called chronic nontuberculous pulmonary infections and their differentiation from pulmonary tuberculosis, the occurrence of a mild type of this condition in both adults and children, and the importance of its diagnosis from the slighter forms of tuberculosis, are still altogether too often overlooked. Both conditions are not uncommon, and are frequently dismissed under various indefinite diagnoses. It has seemed worth while to review the histories of a series of patients presenting this problem to learn whether any more definite criteria of differential diagnosis could be developed.

TUBERCULOUS AND NONTUBERCULOUS INFECTIONS

The low grade tuberculous infections in childhood, with characteristic hilum localization, have for years received much attention; and the subject has been lately reviewed from the roentgenographic standpoint by Honeij,[1] and more recently in the clinical report of Eberson.[2] The mild tuberculous infections of adults, which chiefly involve the respiratory tract, have been described by Head[3] as "concealed tuberculosis," and by Sewall[4] as "occult tuberculosis"; and have recently been discussed by Warfield.[5] It seems probable that the criticism directed against the validity of this as a clinical form of tuberculosis by Geer[6] is based on failure to differentiate the very similar syndromes due to nontuberculous infections which usually do not yield positive tuberculin reactions.

Under the designation "chronic nontuberculous pulmonary infections" or similar cumbersome circumlocutions, there have been described[7] from time to time groups of cases in children and adults, presenting the symptoms of toxemia of varying grades, with chronic cough and expectoration and physical signs indicative of varying degrees of pulmonary fibrosis, sometimes associated with bronchiectasis. The sputum is persistently negative for tubercle bacilli, but contains one or more of the common pyogenic organisms. The course is often interrupted by acute respiratory tract infections, and the usual association of the condition with foci of infection in the upper respiratory tract has been emphasized. Sooner or later the earlier stages tend to become obscured by the development of asthma, chronic bronchitis or perhaps a bronchiectasis. It is significant that this group of cases has received much more attention since the recent pandemic of influenza.

A satisfactory nomenclature has been difficult to devise, but is highly desirable, for the term just used is too all-inclusive. The condition is clinically distinct from a variety of other diseases which are, with equal propriety, chronic nontuberculous pulmonary infections. No single organism is always or even customarily the invader; therefore the condition cannot be etiologically named. It usually follows acute pulmonary infections, but may appear insidiously, apparently in relation to chronic infections of the upper respiratory tract, and therefore cannot be named for its forbears. Patients do not die of this condition; the late stage pulmonary changes entirely obscure the character of the earlier lesions, and an accurate pathologic nomenclature of the earlier stages is therefore impossible. Indirect suggestive evidence is, however, afforded by the roentgen ray, which usually shows rather sharply outlined thickening of the bronchial markings, especially in the middle and lower lung fields, accompanied by varying degrees of parenchymatous densities, occasionally by bronchial dilatations, and frequently associated with varying degrees of increased density and extent of the root shadows. In those cases in which symptoms and physical signs are slight, the roentgenographic signs tend to be limited to varying degrees of bronchial and root shadow accentuation, frequently without any parenchymatous densities. The physical signs are entirely compatible with the interpretation of this evidence as indicating a predominantly bronchitic or peribronchitic indolent inflammatory or fibrotic process.

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* Read before the Section on Practice of Medicine at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[1] Honeij, J. A: Am. Rev. Tuberc. **9:** 1 (March) 1924.

[2] Eberson, Frederick: Am Rev. Tuberc. **13:** 124 (Feb.) 1926.

[3] Head, G. D: Neurasthenia and Tuberculosis (Concealed), J. A. M. A. **63:** 996 (Sept 19) 1914; Am. J. M. Sc. **152:** 582 (Oct.) 1916; Concealed Tuberculosis, Philadelphia, P. Blakiston's Son & Co., 1924.

[4] Sewall, Henry: Am. Rev. Tuberc. **3:** 665 (Jan.) 1920.

[5] Warfield, L. M: Am. Rev. Tuberc. **11:** 112 (April) 1925.

[6] Geer, E. K.: Am. Rev. Tuberc. **13:** 47 (Jan.) 1926.

[7] References may be made to papers containing fairly complete bibliographies by:
Fishberg, Maurice: Am. J. M. Sc. **161:** 365 (March) 1921.
Meader, C. N.: J Iowa M. Soc. **14:** 253 (June) 1924.
Atkinson, Dorothy W.: Am. J. M. Sc. **170:** 693 (Nov.) 1925.

These findings may be brought into relation with the common occurrence of peribronchial infiltration reported by Nichols [8] in the early stages of acute influenza, with the frequent marked involvement of the bronchioles found at postmortem by LeCount and others,[9] and with the frequent acute pathologic changes found by Lyon [10] and by Lucke et al.[11] and emphasized clinically by Arnold [12] in the tracheobronchial glands in the same disease. Fleischner [13] has called attention to the frequency and clinical pictures of nontuberculous infection of these glands in childhood. It would seem justifiable to regard the process as one which primarily involves the peribronchial lymphatic system and the tracheobronchial and hilum lymph nodes with secondary involvement of the parenchyma. It is therefore suggested that the term "nontuberculous peribronchitis," to which may be added if indicated "with pulmonary fibrosis" or "with hilum fibrosis," be adopted to describe this particular syndrome in the belief that, though such a pathologic concept may later be proved inaccurate, a better recognition of the condition would thereby be promoted. It is of further interest to bring into relation the marked increase in the number of these cases of pulmonary fibrosis following the recent pandemic of influenza, as well as that of 1889-1892; the resemblance of its apparent pathology to that of proved influenza; the great frequency of sinus infection in these cases and at postmortem in influenza, and the marked resemblance of the symptoms of these chronic cases to those of mild influenza. On this correlation the speculation may be ventured that the etiologic agent of influenza, when identified, will also be found primarily concerned in the production of many of these chronic infections, both in the postepidemic and in the interepidemic periods.

TUBERCULOUS AND NONTUBERCULOUS SYMPTOMS

The clinical picture usually described as characteristic of these nontuberculous infections is to be compared with, and differentiated from, the well developed forms of pulmonary tuberculosis; and this differentiation is usually not excessively difficult, if reasonable care and persistence in clinical and laboratory study are devoted to it. By contrast with the well defined cases of tuberculous and nontuberculous infection, the symptoms and physical signs of the mild types of both tend to be vague and indefinite, and the temptation to regard the complaints as factitious is often great. Differentiation from occult tuberculosis cannot safely rest on any one symptom or physical sign, or on any one specific test. It must be based on a careful survey of the entire clinical picture, and a painstaking evaluation of the symptoms may be of quite as much value as the presence or absence of abnormal lung signs or the response to specific tests; the weight of evidence is alone trustworthy.

In the history, the presence or absence of direct exposure to open tuberculosis is of manifest, but not of determining, importance. A history of recurring "colds" is more commonly associated with nontuberculous infections, as are also recurring definite acute infections of the upper respiratory tract; but they occur in both, and relative frequency means little when dealing with the individual patient. The onset of symptoms following an acute respiratory tract infection is strongly presumptive evidence of the nontuberculous origin of the symptoms, though the activation of latent tuberculous foci by such infections gives this only relative value. A history of one or more previous periods of ill health, similar to the present, often disguised as nervous breakdown, recovery from which ensued on rest or change, strongly suggests a tuberculous background. Pleurisy and hemoptysis may occur in either, but in these mild types are distinctly in favor of tuberculosis. The symptoms for which relief is sought, in both the tuberculous and the nontuberculous infections, are those of a low grade toxemia, often with little to direct attention to the chest, and have usually existed from six months to several years before medical advice is sought or any real study of the case is made. The outstanding complaint in both is lack of endurance and easy fatigability. In the tuberculous, this chronic tire is usually continuous; in the nontuberculous, it may vary markedly from day to day and from time to time; in both, it responds to rest, but far more promptly in the latter. Weight loss may occur in both conditions. In the tuberculous, it is a practically constant symptom, unless checked by adequate rest; in the nontuberculous, maintenance of normal weight, or at most slight loss, is the rule. A history of persistent marked underweight in a patient of a normal weight family is suggestive of tuberculosis; despite all arbitrary standards, the significance of individual weight must be evaluated in the light of family weight.

Changes of temperament, irritability, undue worry, emotional outbursts, lack of initiative and the like are common in the two conditions. They are an expression of chronic nervous fatigue from chronic toxemia, and while perhaps more common in the nontuberculous, are of slight differential value. Slight degrees of chest pain may be noted in either condition, usually described as a soreness or a dull ache. In the tuberculous infections, this is more commonly located between the scapulae, over the apexes, or referred to the tip of the acromion; in the nontuberculous, it is characteristically located over the lower half of the scapulae, and is especially brought out by fatigue, often disappearing quickly with slight rest. Sharp pleural pain, increased by deep inspiration, is characteristic of tuberculous, not of nontuberculous disease. In both conditions, tenderness on pressure over the area of pain may be present. In the nontuberculous infections, various myalgias or inconstant aching may often be noted. This is more likely to appear during periods of rest and quiet, and thus differs sharply from the "fatigue ache" of tuberculous asthenia. Cough and expectoration may or may not be present to direct attention to the chest. The type of cough is not characteristic of either condition, and sputum may be entirely absent or present only at intervals. A decided amount of expectoration is unusual in these mild cases.

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[8] Nichols, Estes: Tr. Am Climat. & Clin. A. **86**: 1919.

[9] LeCount, E. R.: Pathologic Anatomy of Influenzal Bronchopneumonia, J. A. M. A. **72**: 650 (March 1) 1919. MacCallum, W. G.: Pathology of the Pneumonia Following Influenza, J. A. M. A. **72**: 720 (March 8) 1919. Symmers, Douglas; and Dinnerstein, Morris: Differences in Pathology of Pandemic and Recurrent Forms of So-Called Influenza, J. A. M. A. **74**: 646 (March 6) 1920. Lyon, M. W., and Frost, A. D.: Gross Pathology of Epidemic Influenza, J. A. M. A. **72**: 924 (March 29) 1919.

[10] Footnote 9, fourth reference

[11] Lucke, Baldwin; Wight, Toynbee; and Kime, Edwin: Influenza, Arch. Int. Med. **24**: 154 (Aug.) 1919.

[12] Arnold, H. S.: Latent Infection at Hilum Following Influenza, J. A. M. A. **72**: 1363 (May 10) 1919

[13] Fleischner, E. C.: Bronchial Lymphadenopathy, Nontuberculous, J. A. M. A. **79**: 175 (July 15) 1922.

Single temperatures are usually of little value, but a week's temperature record may give useful information. In the nontuberculous infections, occasional rises to 99.2 may occur, or the temperature may remain subnormal much of the day or may be normal; persistent elevations are unusual, save in the presence of other evidence of an acute exacerbation. In the tuberculous infections, persistent moderate elevations are not uncommonly found, and a sharp rise after exercise, or when the patient is exhausted, is rather characteristic. The pulse rate in the nontuberculous is usually within the normal range, and may be definitely slow; in occult tuberculosis it is frequently high, despite meager symptoms or physical signs. It should be remembered, however, that in the nontuberculous cases a complicating toxic myocarditis may at times give rise to a rapid pulse, with dyspnea and other evidences of cardiac incompetence.

PHYSICAL SIGNS AND DIAGNOSIS

The physical signs elicited on chest examination in these mild types of infection, whether tuberculous or not, are customarily so slight that they must be carefully searched out and painstakingly evaluated, sometimes on repeated examinations. Even so, they must often be recorded as "doubtful," though confirmation may come by finding that, in the tuberculous cases, these poorly defined areas undergo the characteristic changes of a focal reaction after tuberculin, or bloom into active tuberculosis now and then under stress; or, in the nontuberculous, that successive acute "colds" are accompanied by recurring localizations of activity in the same area, perhaps by extensions of it, and that overdoses of autogenous vaccines may produce therein the signs of precisely similar focal reaction. The character of the abnormal signs elicited over the chest is only occasionally a useful guide to the nature of the disease causing the abnormality. The location, whether basal or apical or, if basal, whether or not accompanied by apical changes, is of considerable, though far from determining, value. The mild basal nontuberculous lesions usually present as their characteristic physical signs slight to well marked and sharply localized accentuations of the breath sounds, with or without alterations in relative length of inspiration and expiration, and with or without harsh whisper. Medium or coarse moist râles may or may not be present and persistent. These are, of course, precisely those signs which, located above the level of the third rib, we are accustomed to regard as evidence of active or quiescent tuberculosis. Nontuberculous peribronchitis may also occasionally have a predominantly, or wholly, apical distribution. In a few cases a basal or lower axillary area of cog-wheel breathing, often without other signs, may persist on repeated examinations for months or years. These basal areas are commonly unaccompanied by dulness, although it may be present and sharply localized. Physical signs indicative of enlargement of the tracheobronchial and hilum glands may be present in either the tuberculous or nontuberculous types. As has been the experience of others, the roentgen-ray and physical findings by no means always agree on the existence of such enlargement.

Good stereoscopic roentgenograms are indispensable in the study of these mild types. In the interpretation of these it must, of course, be freely recognized that the "normal" limits of accentuation of the bronchial tree are subject to wide differences of opinion, and that however unsatisfactory the fact may be, individual standards must be largely relied on. In these cases, peribronchial thickening extending to the finer bronchi, marked thickening not extending to the finer bronchi, but accompanied by mediastinal gland enlargement, or thickening of less extent, but accompanied by areas of parenchymal involvement, have been regarded as abnormal. In evaluating the roentgen-ray evidence for or against tuberculosis, lesions predominantly or wholly of the apexes have been regarded as probably tuberculous and of the lower lobes as probably nontuberculous; irregular ("beaded") peribronchial thickening as probably tuberculous, and uniform as probably nontuberculous. The appearance of different age in different lesions is, as emphasized by Dunham, presumptive evidence of the tuberculous nature of the lesions; but recurring attacks of influenza or other acute exacerbations may occasionally produce lesions of apparently different age in the nontuberculous group. Calcification of lesions has been regarded as probable, but not absolute, evidence of their tuberculous nature. It is believed that these represent safe criteria when evaluated in the light of the whole clinical picture in this type of patient. All cases in this series in which beaded peribronchial thickening or evidence of calcification of lesions occurred have appeared, on other grounds also, to fall in the tuberculous group.

If sputum is obtainable, the presence or the persistent absence of tubercle bacilli is, of course, significant, but the frequent absence of sputum makes this aid only occasionally available. Blood examinations have not yielded useful diagnostic aid. Moderate degrees of secondary anemia have been found more frequently in the tuberculous than in the nontuberculous group, but may occur in the latter. A relatively high lymphocyte count has been more common in the tuberculous group, and was especially marked in two of the eight children included in this series, but it may occur in the nontuberculous. In the latter it may be associated, as has been pointed out by Daland,[14] with the focal infections that are such frequent concomitants of this group. The blood pressure changes which have been described by Sewall[4] in occult tuberculosis have been found with practically equal frequency in the tuberculous and nontuberculous groups in which this sign was studied. It is probable that these variations represent a response to toxemia, and are not specific for the tuberculotoxins. The tuberculin reaction, either the Pirquet or the intracutaneous, is of distinct aid in differential diagnosis. If negative, it is strong presumptive evidence of the nontuberculous nature of the disease, since these patients are not ill enough to make anergy a probable factor. If positive, it is suggestive confirmatory evidence of tuberculosis, subject to the limitation that persons with old healed tuberculous foci may present superimposed nontuberculous infections which are responsible for current symptoms. This interpretation was made in three cases in this series in which a well marked intracutaneous reaction was at variance with the predominantly nontuberculous character of the clinical picture. In the nontuberculous, the administration of autogenous vaccines prepared from the sputum, if available, or from cultures from upper respiratory tract foci of infection may produce marked subjective improvement, with improvement in the physical signs or roentgen-ray findings, or now and then a decided focal reaction in the lung, thus adding an important piece of evidence.

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[14] Daland, Judson: Lymphocytosis as Diagnostic Sign of Chronic Periapical Dental Infection in Adults, J. A. M. A. 77: 1308 (Oct. 22) 1921.

SUMMARY

There exists a type of mild, subacute nontuberculous peribronchitis which may produce interference with the patient's comfort and economic efficiency wholly out of proportion to the physical signs detectable on casual examination. It is to be compared with and differentiated from occult tuberculosis, which may produce closely similar symptoms and signs. Such differentiation can usually be made, but only by careful study and evaluation of the entire clinical picture, including the roentgen-ray findings and specific tests. It is important that these conditions be recognized and differentiated, because, properly treated, they are susceptible of marked relief, but tend, if untreated, to the development of more marked and serious involvement; they offer materially different prognoses as to the patient's probable future limitations and respond to materially different forms of treatment.

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RHEUMATIC PNEUMONIA *

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Infection with the as yet unidentified rheumatic virus was for a long time associated only with a special type of febrile nonsuppurative polyarthritis, fleeting from joint to joint, usually leaving the joint attacked free from permanent injury, and reacting to salicylates with decrease of pain and temperature. Later, it was recognized that the same virus was capable of producing lesions in the valvular and mural endocardium, myocardium, pericardium, central nervous system (chorea), subcutaneous tissue (fibroid nodules), and adventitia and media of the thoracic aorta. Though the Aschoff body, the typical microscopic lesion of rheumatic fever, is most often found in the myocardium, perivascular lesions closely resembling it have been demonstrated in some of the conditions mentioned above, which are now recognized as definitely of rheumatic origin. The presence of the Aschoff body, therefore, serves as histopathologic evidence of rheumatic virus infection in the etiologic diagnosis of obscure clinical conditions. It is possible that other lesions, such as occur in the lung, may be due to the same virus, and that only the identification of the specific virus or close histologic study of the lesions produced will definitely solve their relationship to rheumatic infection.

Pulmonary and pleural lesions in the course of recognized rheumatic fever are not infrequent. The following figures are given by various writers:

Thayer:[1] in 25 cases, 44 per cent.
Latham:[2] in 136 cases, 13 per cent.
Fuller:[2] in 246 cases, 11 per cent.
Wunderlich:[2] 108 cases, 6.5 per cent.
Pye-Smith:[2] in 400 cases, 1.75 per cent.

However, with few exceptions there has been no great effort to speak of pulmonary and pleural lesions in terms of definite clinical or pathologic entities. Among these lesions, we find the following directly due to the acute infection:

1. Rheumatic fibrinous pleurisy.
2. Rheumatic pleurisy with effusion (with or without fibrinous exudate).
3. Atelectasis, secondary to pleural effusion.
4. Atelectasis, secondary to enlarged heart.
5. Atelectasis, secondary to large pericardial effusion.

The following are dependent on interference with the normal pulmonary circulation resulting from previous rheumatic valvular defects:

1. Hydrothorax of cardiac insufficiency.
2. Acute pulmonary edema.
3. Chronic passive congestion.
4. Hemorrhagic static infarction of lung.
5. Embolic infarction of lung.

The bronchopneumonias and lobar pneumonias of the usual type are caused by the same bacteria as under other conditions and may complicate acute rheumatic fever or valvular defects.

Garrod,[3] Sturges,[4] Greenwood,[5] His,[6] Goyena,[7] Besnier [2] and Cheadle [2] write of rheumatic pneumonias. I made a study of patients presenting acute phases of rheumatic infection, with special reference to the occurrence and type of pulmonary manifestations. It soon became evident that there was a group occurring in the severer types of rheumatic infection that did not properly belong in the foregoing classification. These cases developed without upper respiratory symptoms or chill; they presented only slight cough, little toxemia, irregular elevation of temperature, areas of marked dulness, and loud bronchial breathing with but few râles. They were of fleeting character and, as a rule, did not influence the prognosis. Are these pneumopathies due to the rheumatic virus and therefore in the nature of a specific rheumatic pneumonia? Are they nonspecific in nature, but dependent on cardiac insufficiency interfering with normal pulmonary circulation, or are they coincidental in the nature of a complicating bronchopneumonia or lobar pneumonia of the usual type?

If it is the result of the rheumatic virus, is this lesion due to the spread of pericarditis to the contiguous pleura? Is it favored by passive congestion of the lungs as a result of a cardiac weakness or the mechanical pressure on the lung by a large heart or pericardial effusion, or is it an independent metastasis of the rheumatic infection? It is possible that the rheumatic virus causes pneumonia in the same way that other organisms may; but until the identity of the specific organism of the disease is definitely established, many of the foregoing questions must remain unanswered.

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* Read before the Section on Practice of Medicine at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Thayer, W. S: Bull. Johns Hopkins Hosp **36:** 102 (Feb) 1925.
2. Cited by Garrod, Treatise on Rheumatism, London, 1890.
3. Garrod: Treatise on Rheumatism, London, 1890, p. 109.
4. Sturges: Cited by Garrod, Treatise on Rheumatism, p. 108.
5. Greenwood: Guy's Hosp. Gaz. **21:** 300, 1907.
6. His, W., in Mehring's Lehrbuch der inneren Medizin, ed. 11, **2:** 588, 1922.
7. Goyena, J. R.: Semana méd. **1:** 1267 (June 11) 1925.

In the cases that I studied, cardiac complications usually appeared simultaneously and occasionally later. The pneumopathy usually occurred in the severer types of rheumatic infection, particularly when endocardium, myocardium and pericardium were all involved. This may be only an evidence of a great tendency to rheumatic visceral involvement. Occasionally cases occur in which only arthritis and no recent endocarditis or pericarditis has occurred.[8] Arthritis frequently preceded, and usually disappeared during, the course of lung manifestations, occasionally to reappear later. Pneumopathy of this type, during the stage of the disease in which inflamed joints are the main feature of the rheumatic infection, was in our experience rare. Like Goyena, I have seen cases of similar lung manifestations precede rheumatic arthritis and endocarditis. However, I do not wish to enter into a discussion of these cases, as the possibility of upper respiratory tract infection with superimposed rheumatic infection arises. Serofibrinous pleurisy may precede. When effusion ensues, the lung signs become masked.

SYMPTOMS AND SIGNS

The symptoms and signs present are, of course, modified by the cardiac lesions present. The onset is, as already stated, usually insidious during the course of the rheumatic infection. Upper respiratory tract symptoms of laryngitis or bronchitis are absent. The temperature rises above the previous level, but there is no chill, no severe pain in the chest, or rusty sputum, and cough is slight or absent. Pain is not a noticeable feature. Sputum is usually scant, and in examination may show staphylococci and streptococci with scant or no pneumococci. Toxicity is not marked; sweats are marked, and the fever is usually low and irregular.

The physical signs, usually at one or both bases, vary in area and intensity, are fleeting in character, and are not modified by careful change of posture or by aspiration of the pleural cavity. Palpation may yield decreased tactile fremitus. The percussion note is dull, but the area is not beyond the confines of the involved lobe, and, if the lesion is on the left side, Traube's space is usually not obliterated. There is no Grocco triangular dulness on the opposite side. Auscultation from day to day fails to yield the characteristic development of the signs of the different stages of lobar pneumonia. There is an absence of the generalized bronchitis usually associated with bronchopneumonias. The râles are fine and superficial and most numerous at the periphery of the dull area. The respiratory murmur may be decreased in intensity or absent; or loud, rough inspiration with prolonged soft expiration may be present. Usually bronchial or tubular breathing is heard over the dull area. Vocal resonance is increased, and bronchophony may be present. Signs of resolution, such as râle redux, do not occur. The signs clear up rapidly, and may reappear at another site. Benoist[9] and Goyena[7] are of the opinion that the prompt subsidence under salicylate therapy is diagnostic of rheumatic infection.

In a few instances in which the physical signs were highly suggestive of abundant pleural fluid, negative roentgen-ray findings, unobliterated Traube's space in left side cases, absence of the Grocco area of dulness, and negative pleural puncture, which yielded no or only a few cubic centimeters of an orange colored fluid, helped to exclude the diagnosis of effusion. Roentgen-ray examination of the chest was of decided value not only in excluding pleural effusions, but also in giving information as to the size of the heart and revealing areas of opacity without sharp border.

I believe that these physical signs are often not noted because of failure to examine the backs of patients during the active phases of carditis and arthritis. Such examination may have to be omitted because of the entailed increased suffering and the inadvisability of having patients who are badly decompensated sit up.

This type of pulmonary lesion is rarely the cause of death. The signs usually persist for a few days only, clear up with great rapidity, and show a tendency to recur at the same or other areas. If convalescence is protracted, which is usually the case, it is due to active rheumatic involvement of the heart. The prognosis depends on the severity of any associated myocarditis, a feeble, irregular pulse with evidence of visceral stasis being of serious portent. Deaths in the acute phase of rheumatic infection are usually attributed to hyperpyrexia and cerebral manifestations, acute cardiac insufficiency or a complicating bronchopneumonia.

PATHOLOGY

The pathologic changes in the lungs in these cases have been described by Besnier,[2] Syres,[10] Benoist[9] Longstreth,[11] Coombes[12] and Goyena.[7] That the condition is very infrequently found at the postmortem table is due to the fact that death is unusual during the active phases of rheumatic infection, the fleeting character of the pneumopathy—only a few dying at a time when the lesions are evident—and, lastly, because of failure to differentiate the lesion from ordinary bronchopneumonia or lobar pneumonia.

The term "rheumatic pneumonia" is, correctly speaking, a misnomer, since we are not dealing with an exudative inflammation of the lung but what is described as splenization. The involved area of the lung is more voluminous and is heavier, and the overlying pleura may show serofibrinous inflammation. On cut surface, the lung parenchyma is found involved to a variable depth and with a varying degree of reaction. It shows a macroscopic similarity to splenic tissue, being dark red, moist, soft and scarcely crepitating, and oozing sticky blood. Like other exudative rheumatic lesions, the pneumopathy shows a decided tendency clinically to stop short in its early stages, to disappear rapidly and to recur at another site.

According to Goyena,[7] the lung shows a decided tendency to be involved at the sites at which the parietal is reflected to the visceral pleura, loose subpleural tissue being present in such locations, as at the interlobar fissures, hilum, apexes and margins of the lung. The areas are of varying size; they may be multiple, unilateral or bilateral and, if unilateral, are usually on the left side. The lower lobes are the ones usually involved.

The lesion is described as atelectasis plus hyperemia and edema. The bronchioles and alveoli are collapsed, the blood vessels dilated, and edema is present in the alveoli, interstitial tissue and subpleural tissue. A secondary alveolar catarrh occurs. This differs from the bronchopneumonia found in and after rheumatic fever, which, according to Christeller,[13] presents an exudate in the alveoli often very rich in leukocytes, scant in fibrin, with a tendency to purulent softening, and as a rule showing cocci.

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[8] Shaw: Guy's Hosp. Gaz. 21: 500, 1907. Goyena (footnote 7).
Benoist: Des pneumopathies rheumatismales, Paris thesis, 1900.

[10] Syres: Acute Rheumatism, ed. 3, London, 1899, p. 661.

[11] Longstreth: Rheumatism, Gout and Some Allied Disorders, 1882, p. 133.

[12] Coombes: Rheumatic Heart Disease, 1924, p. 258.

[13] Christeller: Personal communication to the author.

Splenization of the lung is not a pathologic picture to be found only in rheumatic pneumopathy. It is also described in connection with some forms of pulmonary tuberculosis, between pneumonic foci, and in that congestive phase of lobar pneumonia known as Woillez's disease.

The presence of the Aschoff body in the heart is generally recognized as evidence of the rheumatic causation of acute cardiac lesions. There have as yet appeared no reports of investigations made with reference to the presence of Aschoff bodies in the lungs obtained during acute phases of rheumatic fever. Such studies are necessary, and must be carried out in a painstaking way.

DIFFERENTIAL DIAGNOSIS

The loud bronchial breathing, dulness not extending beyond the confines of a lobe, absence of flatness, absence of a Grocco triangle of dulness on the opposite side, absence of change of signs with careful change of posture, presence of resonance in Traube's space in leftsided cases, the absence of displacement of the heart, roentgen-ray observations of clear costophrenic sinuses, and negative pleural aspiration all speak against fluid in the pleural cavity. The finding of outwardly displaced heart borders is of no differential value, as it may be due to dilatation of the heart rather than displacement. Hydrothorax as a cause of pleural fluid is rarely encountered in acute rheumatic infection, and then is usually associated with ascites and edema of the lungs and is more apt to be rightsided if only one side is involved.

Pulmonary infarction is rare in acute phases of rheumatic carditis; it usually occurs shortly before death, and is attended by hemoptysis and sudden increase in dyspnea.

Compression atelectasis of the lung due to a large heart is infrequent without associated pericardial effusion. In chronic valvular disease with marked dilatation and hypertrophy, it is rarely the cause of compression of the left lower lobe. Whatever atelectasis is present is usually at the borders of the lung in contact with the enlarged heart, and clinically presents only crepitations on inspiration and not signs of marked consolidation.

Compression atelectasis of the lung due to marked pericardial effusion reveals signs of consolidation only at the angle of the left scapula, which are modified by change of posture; they disappear very slowly, and concomitantly with the decrease of pericardial effusion. The evidence of an effusion into the pericardial sac does not exclude the possibility of a concomitant pneumopathy, as the two conditions may be simultaneously present. The absence of the characteristic area of dulness occurring in pericardial effusion or of marked dyspnea, and the presence of physical signs on the right side or in front, speak for rheumatic pneumopathy.

Rheumatic so-called splenization of the lung differs from the usual bronchopneumonia in the absence of signs of a previous bronchitis or bronchiolitis and the presence of early dulness and loud bronchial breathing, while bronchopneumonia is often secondary to an upper respiratory infection, shows rhonchi with medium and fine râles, and marked cough and expectoration. Dulness and diminished respiration are slight and generalized, and become marked only later when the areas become confluent. The characteristic roentgen-ray shadows of irregularly distributed small foci, and of the irregular borders of confluent areas, while present in bronchopneumonia, are entirely missing in splenization. On gross examination the areas are dry, granular, focal and confluent. The bronchopneumonia exudate is rich in fibrin, leukocytes, erythrocytes and bacteria.

The rheumatic pneumopathy described above differs from lobar pneumonia in that there is no chill nor sudden rise of temperature, cough is slight, and the sputum is not rusty. On spread, the sputum shows staphylococci and streptococci and few or no pneumococci. The facies is pale and cyanotic instead of being flushed. The symptoms of toxemia are mild. There are present less defined physical signs, no regular transition of signs according to stages of consolidation, no critical fall of temperature and no herpes labialis. From a study of the literature, it would appear that lobar pneumonia is rare during the acute phases of rheumatic infection, usually occurs in the convalescent stage, and is practically always fatal.

CONCLUSIONS

1. From a clinical standpoint at least, there is evidence that the pneumopathy described above is to be interpreted as a manifestation of the action of the virus of rheumatic fever.
2. For absolute proof it will be necessary to demonstrate localization of the rheumatic virus in the lesion. This cannot be done until the cause of rheumatic fever is definitely identified. The finding of Aschoff bodies localized in the lesion would be of the greatest importance.
3. This paper is presented in the endeavor to stimulate further clinical studies and investigations of appropriate pathologic material.

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PRIMARY CANCER OF THE LUNGS

A CLINICAL REPORT OF SEVENTEEN CASES *

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In this report, attention will be called particularly to primary cancer of the lungs. However, for the purpose of discussing certain references to probable determining etiologic factors, attention will also be called to the cases of secondary carcinoma which occurred in our experience during the same time that the primary cases occurred.

Carcinoma of the lungs in the most recent studies shows a much higher incidence than was formerly thought. It has come to be recognized as occurring comparatively frequently; so much so that in the consideration of diseases of the chest, especially of the chronic form, one should always hold in mind the possibility of primary carcinoma of the lungs.

Various causes have been suggested to explain this remarkable increase. As yet there is no agreement among clinicians and laboratory men. The accumulated evidence of many case reports may help to clarify the matter, and this is our reason for reporting these cases.

In the order of frequency of the incidence of carcinoma in any organ of the body, the lungs are gradually

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* Because of lack of space, this article is abbreviated in The Journal by the omission of case reports and roentgenograms. The complete article appears in the Transactions of the Section and in the authors' reprints.

taking a higher place, Barron[1] reports that of 4,362 necropsies performed at the University of Minnesota from 1899 to 1921, there are recorded thirteen cases of primary carcinoma of the lungs (0.29 per cent). From 1899 to 1911, for a period of twelve years, there is not a single case recorded in 1,333 of those necropsies. From 1912 to 1918, a period of seven years, there are four cases recorded in 2,026 of these necropsies (0.20 per cent), and from January, 1919, to June, 1921, a period of two and one-half years, there were nine cases in 1,006 necropsies (0.90 per cent), the highest incidence ever recorded.

Table 1.—*Incidence of Carcinoma of Lung Found by Barron*

Year	Necropsies	Cases	Per Cent
1899-1911..............	1,333	0	0.00
1912-1918..............	2,026	4	0.20
1919-1921..............	1,006	9	0.90
Total..............	4,362	13	0.29 average

Fried[2] reports that from 1913 to 1921 there were no cases of primary carcinoma, whereas from 1921 to 1925 there were five cases. The number of necropsies done from 1915 to 1925 was 1,400

Table 2.—*Cases of Primary Cancer of Lung (Pittsburgh Clinic)*

Case	Age	Sex*	Year	Previous History	Apparent Duration	Fever	Miscellaneous Conditions	Side	Necropsy	Pathologic Type	Metastases
1	55	♂	1906	Injury	8 months	Yes	Aphonia	Right lower	Yes	Endothelioma	Not noted
2	56	♂	1912	Pneumonia, 9 yrs.; pleurisy, 7 mos.	4 months	Yes	Clubbed fingers; bronzed skin	Right lower	Yes	Alveolar carcinoma	None
3	59	♀	1918	No note	9 months	Yes	... .	Left lower	No	Endothelioma	None
4	45	♂	1918	No note	7 weeks	Yes	Paralysis left arm; fluid	Left lower	Yes	Endothelioma	Yes
5	42	♀	1921	Influenza, 2 yrs.	8 months	Yes	... .	Right lower	Yes	Right bronchial cancer	Yes
6	74	♀	1922	Influenza, 4 yrs.	3 months	Yes	Paralysis left vocal	Left lower	No	....	None
7	32	♀	1923	Pneumonia, 2 yrs.	9 months	?	....	Left lower	No	....	None
8	41	♂	1923	Bronchopneumonia, 5 yrs.	4 months	Yes	Fluid	Left lower	No	....	None

* In this column, ♂ denotes male; ♀, female.

In reviewing the early history of carcinoma of the lungs, one is impressed with the fact that before the advent of that epoch of pathology for which Virchow is responsible, carcinoma of the lung was looked on as a kind of pathologic curiosity and was very little understood. Since the advent of the cellular pathology of Virchow, and up to the beginning of the past decade, the chief interest was centered on the histopathology of this disease. The origin of cancer of the lung, whether the alveolar epithelium, the bronchial epithelium or the epithelial lining of the bronchial glands, seems to have been of the greatest concern. Also the question of the metaplasia of the individual epithelial cell had received considerable attention. This is well illustrated in an article by Henrici.[3]

Such publications have given evidence of the carefulness of differentiation in the histologic studies of tumors, especially the carcinoma of the lungs, but they have not stimulated the clinical study of malignant disease of the chest to the degree demanded by the condition. It seems that the recent apparently increased incidence of this disease has done more to excite the interest of the internist and has led to a more careful study of the condition as a whole. This period of the histopathologic study of the lungs might well be called the second period in the development of our knowledge of cancer of the lungs.

In the past decade, interest has centered more about the clinical manifestations of cancer of the lungs. The time has come when the clinician must be ready to recognize those symptoms and signs of the chest which will lead him to the diagnosis of this important and increasing condition. This increased interest on the clinical side seems to represent the third period, or the very frontier of our present relation to the problems of carcinoma of the lungs. The fourth period will no doubt deal with etiology and treatment, surgical or whatever it may be.

Surgery is rapidly making for itself a place in diseases of the chest. When surgery enters a certain field, it is well for the clinician to do such frontier work as will enable him to be of the greatest assistance in making the earliest diagnosis possible, and also in considering the safety of surgical or other procedure.

As yet there is no cure for cancer of the body anywhere except early excision. To follow successfully, therefore, the problem of carcinoma of the lungs on this line will require the highest diagnostic skill of the internist. The attention that pulmonary tuberculosis has received in the last four or five decades has resulted in the most intensive study of diseases of the chest. From the statistics that have come out of large centers, it appears at times that too much enthusiasm is evidenced by the clinician in stamping a lesion of the chest as being tuberculous, and in this eagerness to make an early diagnosis some of the more rare, especially chronic conditions, have been overlooked. Among these is carcinoma of the lungs. We need offer no further reasons for giving a report of seventeen cases of primary carcinoma of the lungs and a brief discussion of a group of twenty-five cases of secondary carcinoma of the lung. Nine of the primary cases about to be reported occurred at the clinic of the Clifton Springs Sanitarium, and eight occurred in Pittsburgh under the care of one of us (J. A. L.). It will be noticed at once that most of these cases were reported as having occurred since 1918 (tables 2 and 3). In both places from which these cases are reported, the clinical and pathologic study of cases had been going on for at least twenty-five years. There was no change in the method of study of cases of all kinds, or of keeping records, but suddenly there appeared in both clinics this marked increased incidence of primary carcinoma of the lungs which has been noted in a number of other clinics.

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[1] Barron, Moses: Carcinoma of the Lung: A Study of Its Incidence, Pathology and Relative Importance, Arch. Surg. 4:624 (May) 1922.

[2] Fried, B. M.: Primary Carcinoma of Lungs, Arch. Int. Med. 35:1 (Jan.) 1925.

[3] Henrici: Primary Cancer of the Lung, J. M. Research. 26:395, 1912.

PATHOLOGY

Cancers of the lung have been classified as nodular infiltrating and diffuse or miliary. The second form has been gradually thought to occur most frequently. Cases 9 to 12 were all placed in the second group. It is very difficult to judge as to the others. There is not sufficient data available concerning the first four necropsies (J. A. L.'s cases), to express an opinion. According to the roentgen-ray examination the sixth, seventh, eighth and fourteenth cases might be in the class of infiltrating tumors. Case 13, we believe, would be a diffuse or miliary type. The dense masses seen in the third and the fifteenth makes us believe that these belong to the nodular tumors.

According to Barron, most authors believe that the right lung is more frequently involved than the left, and the right upper lobe more than any of the others. Fried also recently stated that the right side is more often involved. Seven of our cases involved the left lower lobe and only five the right, while four of these showed more pronouncedly in the lower lobe. Eleven of the patients had the primary lesion in the left lung.

Table 3.—*Cases of Primary Cancer of Lung (Clifton Springs Clinic)*

Case	Age	Sex	Year	Previous History	Apparent Duration	Fever	Miscellaneous Conditions	Side	Necropsy	Pathologic Type	Metastases
9	45	♂	1921	Catarrh	8 months	No	Hoarse	Left lower	Yes	Adenocarcinoma of bronchial gland; cyst, vocal cord	Lymph, liver, pericardium
10	77	♂	1923	Tuberculosis at 30 and 37 yrs.	10 months	Yes	Diagnosis from specimen sputum	Left lower	Yes	Adenocarcinoma; bronchial lining	Lymph nodes
11	62	♀	1923	Benign tumor, 20 yrs.	1 year	Yes	....	Right lower	Yes	Medullary carcinoma, alveolar lining	Lymph nodes, liver, suprarenals
12	78	♂	1923	None	5 months	Yes	Fracture left clavicle	Left lower	Yes	Adenocarcinoma, bronchial lining	Lymph nodes, bones, heart, kidney, suprarenal
13	57	♂	1921	No note	10 months	Yes	Metastases brain	Right lower	None		
14	48	♀	1924	Bronchitis	8 months	....	Decompensated irrational	Right lower	None		
15	56	♀	1925	Pleurisy, influenza	6 months	Yes	....	Left lower	None		
16	31	♂	1925	Injury chest, cough 3 yrs.	3 years	No	Epileptiform attacks	Left lower			
17	48	♂	1925	None	1 year	Yes	Bloody fluid chest	Left lower	Alive, June 25		

Histologically, lung cancers are classified as adenocarcinoma, simplex, schirrous, alveolar or medullary, of which the adenocarcinomas are the most frequent. The cells are columnar or cylindric, squamous and polymorphous in type. In the discussion of the pathology of our cases we shall have to limit ourselves to the four cases that came to necropsy at this hospital, since no notes of the pathology or material of the other necropsies are available.

Two of the cases were adenocarcinoma (9 and 12) of the columnar cell type, one of which possibly should be called polymorphous (case 12), because some of the cells were not of the columnar variety. The other specimen (case 9) had a few glandular areas which showed mucous secretion. The third case (10) possibly also should be classified as adenocarcinoma since glandular areas of cancerous cells were to be found. Some of these showed papillary ingrowths. In most places, however, polymorphous cells predominated. The fourth case (11) was formed of cords and columns of squamous cells with definite cell borders; that is, an alveolar type. No areas of keratinization or epithelial pearls were found. Some may object to the term squamous cells in the specimen. Normally we have squamous cells even if no keratinization or intercellular bridges can be demonstrated, and we believe that the term is better in our cases than polymorphous. We would not uphold Ernst that squamous should not be used where keratinization is not seen.

HISTOGENESIS

The question of histogenesis has been much discussed, with no unanimity of opinion. Every one agrees that lung cancers may develop from bronchus lining or glands, or from the alveolar lining. In the first two locations we have more or less columnar cells; in the latter, flat cells. Originally all arise from an esophageal outpouching lined by tall columnar cells. Later the esophagus develops a stratified squamous epithelium, while in the lung there remains a cylindric type in the bronchi and glands, and flat cells form in the alveoli after function begins There is no reason why cancer may not develop in any of these three places.

Only a few cases reported in the literature are generally accepted as having arisen from the alveolar epithelium. That metaplasia may occur in the bronchial lining following infection is shown by several authors.[4] Theoretically, there is no reason why this should not occur in the bronchial glands and alveoli. Certainly, inflammatory injury can occur in the alveoli as readily as in the bronchi. Often the cases are so far advanced when studied microscopically that it is difficult to state definitely what the origin was. In the late stages there are no definite characteristics distinguishing an alveolar, bronchial lining, or gland origin. Definite involvement of the bronchial lining only, with high cells in the metastases, may be taken as clear evidence of bronchial lining origin; while definite involvement of the bronchial glandular tissue with mucous secretion and no involvement of the bronchial epithelium would indicate the latter origin; as extensive spread, little or slight involvement of bronchial lining and glands and an alveolar tumor of cells resembling regenerating alveolar cells would indicate an origin from the alveoli. However, the latter cases are hard to find. It has been stated that origin from any of these regions may give rise to glandular tissue or alveoli, cylindric or flat cells, mucous secreting, etc. Keratinized flat cells, or intercullular bridges, have been thought by some to occur only if the cancer arises from the alveoli. Certainly, such variations can arise from bronchial epithelium as well as from alveoli which have the same embryologic origin.

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[4] Haythorn: On the Metaplasia of Bronchial Epithelium, J. M. Research **26**: 523, 1912.

In the cases that came to necropsy in our hospital, case 9, an adenocarcinoma, showed definite involvement of the bronchial glands. A few cancerous glands showed mucous secretion. The bronchial epithelium was missing in some places. This case was thought to be of bronchial gland origin. In the tenth case there was a mass projecting into the bronchus, and over this the surface epithelium was missing. There were some alveoli of squamous cells. Because of the nodule, it was considered to be of bronchial lining origin with more marked metaplasia of cells than any of the others studied. The third case that was examined post mortem (case 11) was a nodular cancer of the left lower lobe, a squamous cell cancer which may be of alveolar origin. The numerous cancerous glands with tall cells and cords of polymorphous cells of case 12 are thought to have arisen probably from the bronchial lining.

A diagnosis of endothelioma has been made frequently in primary lung cancers. This diagnosis was made several times at the postmortem table in the first eight cases here presented. In the first case, a diagnosis was probably largely from tissue taken at the operation rather than from that taken at the postmortem. We would be inclined to agree with Ribbert and Kaufman that pleural lining cell tumors, which most authors mean when speaking of primary tumors of the chest, not of lung origin, should be considered carcinomas. Minot originally used the term mesothelium for this lining tissue; possibly mesothelioma would be permissible. Such a primary growth was studied recently by the roentgen ray and the pathologic laboratory but was not included among our primary lung carcinomas, as no clinical study was made of the case.

METASTASES

In the four cases thoroughly studied at the postmortem table there were metastases in all cases to the liver and regional lymph nodes. In one there were bone metastases and in the suprarenal in two with no special symptoms, so that we cannot bear out Fried's statements that unusual symptoms due to early metastases frequently overshadow the picture of a primary lung involvement. Fried stressed the frequency of bone and brain or nerve metastases in his series. In only three cases of this series of seventeen cases was there evidence of central nervous system involvement.

SYMPTOMATOLOGY

In the cases reported, certain definite symptoms stood out prominently throughout the course of the disease. Among these were, in the order of their frequency, pain in the chest, dyspnea, cough, general weakness, loss of weight, cachexia, fever at some time or other, and bloody expectoration.

Pain.—This seemed to be the earliest and most persistent symptom. When present, it always occurred on the same side as the lesion. It was occasionally referred to the shoulder and neck of the same side. This was remarkable in one case in which the diaphragm was involved. It was usually worse at night, and seems to conform to the pain due to malignancy elsewhere in the body. It was not always aggravated by the respiratory excursion, but was of a continuous, deep-seated form.

Dyspnea.—This seemed to be dependent on three factors: the severity of the pain, the extent of lung involvement, and the presence of a pleural effusion. It is a comparatively early sign, but except in such a case as that in which an atelectasis occurs, as in one of our cases, it is not necessarily early.

Cough.—In twelve of our seventeen patients there was an associated cough, irritation of throat, or hoarseness. Eleven of these had expectoration, and in five the expectoration was bloody. In one case the bleeding was observed through the bronchoscope to be a continuous flow from the bronchus of the lung involved.

Weakness.—This is a symptom of considerable significance because it separates the malignant group of chest cases from the benign almost at once. While the patient with pulmonary tuberculosis or other infections of the lung may complain of feeling weak, the patient with carcinoma of the lung complains of a continuous and a progressive weakness. There is no remission, and it does not seem to be alleviated by rest.

Loss of Weight.—This is not an early symptom as in carcinoma of certain other organs, such as of the digestive system. One is usually surprised, in the early stage of the disease, at the comparatively healthy appearance of the patient. Of course, in the later stage emaciation is rapid and marked.

Cachexia.—What has been said of the loss of weight may also be said of cachexia. It is slow in appearance but rapidly progressive when it once becomes evident.

Fever.—In eleven cases there was a temperature above 99. In two there was no fever and in two the observation was not made. Generally the temperature hovers between 99 and 101, but in a few cases there was an acute rise to 102 or 103 now and then for a day or so, when it again dropped to the former level.

Anorexia.—This was a remarkably constant symptom, probably as pronounced as in the cases of carcinoma located in certain portions of the alimentary tract.

PHYSICAL SIGNS

The early physical signs of cancer of the lungs may be quite indefinite. And this can very easily be so when one considers the fact that the lesion may begin at the root of the lungs, or anywhere between the large bronchus and the periphery of the lungs; also that the pleura, unless primarily affected, may escape until the disease is well advanced; and also that the early stage is not necessarily inflammatory and may produce very little disturbance of function. However, in all our cases except one, the physical signs at some time or other were outstanding and furnished an interesting field for investigation.

The patients, with few exceptions, looked sick and seemed in distress. The respiratory movements of the chest on the affected side lagged or were absent. Occasionally, the superficial veins of the chest on the affected side were distended. The outstanding physical sign of the chest at the stage in which most of our patients were seen was the impairment of percussion resonance, or the complete dulness. This, of course, varied in extent, but it became eventually a large area. This was more likely to be pronounced on account of the frequency of an accompanying pleural effusion. In seven cases there were large effusions. The vocal and tactile fremitus were frequently diminished, or absent, with the breath sounds diminished, or absent also. It was not always easy to demonstrate an effusion, for the solid lung gave physical signs remarkably similar to an effusion. This can be easily conceived when one recalls how definitely solid the lung tissue and pleura are found at necropsy in these cases. In short, the signs of the consolidated area were entirely different from the consolidated lung of a lobar pneumonia, in that the breath sounds were greatly diminished or entirely absent. When the growth is so situated as to produce atelectasis of the lungs, physical signs may become quite bizarre, depending on the extent of the atelectasis and the relative amount of fluid and air in the pleural cavity; but we can speak from experience of only one case.

We feel that the malignant lung is very susceptible to secondary infection, as with a cold, or by a micro-organism already present in the lung, such as the pneumococcus. An acute exacerbation may therefore easily occur, and may produce daily changes in the physical signs and variations of temperature. When the acute condition subsides, however, the former signs are usually found to persist.

The remarkable point in the physical examination of our cases of primary carcinoma is that there are very few metastases to other parts of the body. The growth in several cases, however, involved other tissues or organs. In one there was a leftsided hemiplegia; in another, there seemed to have been metastases to the brain; and in the third, the symptoms of epilepsy developed. In one case, the tumor protruded through the chest wall and also penetrated the diaphragm and pushed before it the capsule of the liver. In several, the supraclavicular glands were enlarged.

DIAGNOSIS

In making the diagnosis of primary carcinoma of the lung, it must be kept in mind that, as compared with other lesions of the lungs, it is a very rare condition, and every other possible disease should be excluded first. The most frequent location for carcinoma anywhere in the body is the stomach. The next most frequent location is the uterus and, after it, the breast. According to recent statistics, carcinoma of the lungs comes about seventh in the order of frequency.

The acute and chronic infections, including syphilis, are to be carefully considered under all circumstances.

One should take practically the same attitude toward primary carcinoma of the lung as one does toward primary carcinoma of the liver. It must be proved from every standpoint. The burden of proof lies in showing that there is not some other of the more common lesions of the lung present. On the other hand, when the same signs are present in a patient known to have had carcinoma elsewhere, the burden of proof lies in showing that it is not a secondary carcinoma of the lung.

The history of pain in one side of the chest, which is more or less persistent, and especially more at night, loss of appetite, weight and strength, which are more or less progressive, and this in a middle aged person, make one suspicious of malignant disease in the lungs.

The slowly progressive extension of the physical signs is also of striking evidence, and, finally, a fluoroscopic or stereoscopic examination of the chest showing an irregular shadow should put one in such an attitude that he will use every diagnostic resource before he will abandon the idea of a malignant condition in the lungs.

With these symptoms and signs definite, it is necessary only to consider the condition in the chest from which carcinoma of the lungs should be differentiated. These conditions are such as pulmonary tuberculosis, acute and chronic, fibroid phthisis, fibroid pleurisy, unresolved pneumonia, syphilis of the lungs, mycoses of the lungs, bronchiectasis, interlobar empyema, abscess of the lungs, and enlargements and tumors common to the mediastinum.

To make these differentiations, the history and physical examination are of great importance, but they do not furnish the conclusive evidence that certain additional laboratory tests furnish. The roentgen-ray examination is of the utmost importance. The fluoroscopic examination, followed by flat plates in various positions, or stereoscopic plates, are very helpful. The growth is progressive, and this will be noticed in the roentgen-ray examinations if made at short intervals of a week or so. A point in roentgen-ray examination of the cases has impressed us very much, and that is a shadow occupying the greater part of one or the other lung, with light coming through at the apex and also through the costophrenic angle. This of course cannot occur if there is already fluid in the pleural cavity. But in the early stage, before the appearance of a pleural effusion, it is quite significant (fig. 4).

The sputum examination for tubercle bacilli should be made a number of times before one concludes that the lesion is nontuberculous. There may be an old fibroid phthisis and a carcinoma of the lung in the same chest, as was shown in one of our cases.

The presence or absence of fever is of little diagnostic significance in differentiating between carcinoma and tuberculosis of the lungs. In eleven of our seventeen cases, the temperature was above 99. In some it went to 102 and 103 F. The general impression is that there is no fever in carcinoma of the lungs; this is contrary to our experience.

Fibroid pleurisy is difficult to diagnose from an endothelioma of the pleura, such as in case 1. In such a case a paracentesis may furnish fluid for examination, or perhaps a small piece of tissue may be obtained, as in cases 3 and 4. Microscopic section of such a piece of tissue may make the diagnosis complete.

An unresolved pneumonia will, after all, clear up unless it is a so-called organizing pneumonia, which, according to the opinion of some authorities, may of itself become malignant.

The several mycoses of the lungs may present a confusing picture, suggestive of carcinoma of the lungs, but examination of the sputum may help. The usual mildness of the course of the disease usually clears up the diagnosis. There is very little pain, and the other symptoms are correspondingly mild.

In our limited experience we have not encountered a single case of carcinoma of the lungs in which there was the fetid odor of the breath which is so distressing in bronchiectasis. Nor is there the profuse bronchorrhea.

Interlobar empyema may from a roentgen-ray standpoint present some difficulty in differential diagnosis, but the history of acute illness, the hectic temperature, the high leukocyte count and the presence of pus revealed by the exploring needle enable one to differentiate.

Mediastinal enlargements and growths may cause a group of symptoms which at times suggest strongly carcinoma of the lungs. Unfortunately, the roentgen-ray examinations are not always satisfactory in these cases, especially if the growth encroaches on lung tissue space. However, in these cases the pressure symptoms resulting from the crowding of the mediastinum are quite significant and wholly different from the chest pains of carcinoma of the lungs.

While we would not wish to convey the idea that the diagnosis of primary carcinoma of the lungs can be made with comparative ease, we do believe that most of the mistakes in the diagnosis are made by not having the possibility of such a condition in mind when examining a chest which presents the evidence of disease.

In all of our cases in which necropsy was obtained (eight), or from which tissue was recovered in sputum or by paracentesis (three), the diagnosis was confirmed, and we feel reasonably sure that the diagnosis in the other cases would have been verified if necropsy had been obtained.

LABORATORY OBSERVATIONS

From the laboratory standpoint, several points are of special interest and of particular importance in the diagnosing of primary carcinoma of the lung. In many cases the roentgen-ray as well as the physical observations often do not absolutely rule out tuberculosis. Sputum examination for tubercle bacilli, when negative, means little; but repeated negative examinations have much value, although less than even one positive test. Several negative sputum examinations, especially when there is a cough and sputum, have considerable value and carried much weight in case 9, for example, even when a definite laryngeal lesion pointed strongly to a tuberculous process. Examination for cancer cells in the sputum or aspirated chest fluid should be done, but it is not easy to determine them. In one of our cases (case 10) a piece of tissue was expectorated, and after fixation and sectioning, mitotic figures in definite bronchial epithelium made the diagnosis of cancer definite. Such an occurrence is probably unusual.

Another laboratory finding of importance is the blood count (table 4). It will be seen from the chart that eleven of the cases show a more or less severe secondary anemia. More important is the increased leukocytosis and neutrophilic increase, which were found in eleven and thirteen of the cases. The combination of an anemia with leukocytosis and neutrophilic increase was found in eight of the seventeen cases and is most characteristic of malignancy. With positive roentgen-ray and clinical findings in the chest, we believe that this is almost conclusive. Occasionally a marked leukocytosis, from 25,000 to 30,000, is found, possibly indicating an acute infection. With the neutrophilic increase and low or absent eosinophils, it meets all the requirements for the "septic factor" of Simon, an acute pyogenic infection. This was found seven times in this series. It is believed that secondary bacterial infection can involve the necrosed lung tissue and complicate the blood picture.

Table 4.—*Blood Counts of Primary Lung Cancer*

	Red Blood Corpuscles	White Blood Corpuscles	Hemoglobin	Polymorphonuclear Neutrophils	Lymphocytes	Mononuclears	Eosinophils	Basophils
1	3,750,000	22,200	43	80	14.5	3	2.5	0
2	4,340,000	14,300	56	75	19	3	1	1
3	4,000,000	11,000	70	78	22	0	0	0
4	4,470,000	9,200	80	....	....	...	...	...
5	4,560,000	10,600	80	84	12	6	0	0
6	4,000,000	9,000	85	91	....	...	...	...
7	4,600,000	13,200	90	77	18	.5	0	0
8	4,300,000	15,400	80	76	?	?	?	?
9	5,130,000	7,400	105	73	19	5.5	1.5	0 5
10	3,790,000	14,600	59	86	10.4	0.4	3.2	0
11	3,900,000	20,400	72	84	14.8	0.4	0.4	0.4
12	3,690,000	26,200	65	83.6	14.4	1.2	0.8	0
13	4,410,000	12,000	87	85	14	0.5	0.5	0
14	4,600,000	10,400	93	77.6	19.6	0.4	2	0.4
15	3,100,000	8,400	44	64	30	1.3	3	0.6
16	5,360,000	9,000	104	65	29.7	2.7	3	0.3
17	2,940,000	7,800	48	68	23.5	3.3	1.7	0.7

The roentgen-ray examination is, of course, invaluable. In the nine cases studied at the sanatorium, and all examined fluoroscopically and stereoscopically, the opinion given at the time was usually definite. In all the cases the possibility of a new growth was mentioned. In five of the cases it was stated after stereoscopic chest examination that there was probably a new growth in the chest. Two of these were thought (cases 2 and 14) possibly to be metastatic. In case 13, the possibility of a new growth was considered but not believed likely. On recent reexamination of the films, the roentgenologist, Dr. Jewett, expressed the opinion that he now should call such a picture a new growth. It is to be noted that this case was not confirmed by necropsy. The first case examined here (case 9) was thought to be tuberculosis with fluid, although the conclusion read: "I cannot differentiate here between pulmonary tuberculosis, fluid, thickened pleura and new growth of the lungs." In case 15, the same difficulty arose. From fluoroscopic examination the opinion was expressed that this was a new growth, but the stereoscopic appearance was much like tuberculosis.

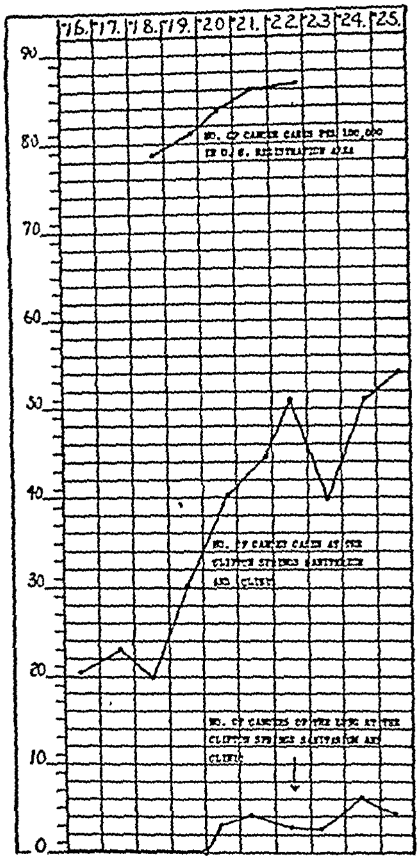

Fig. 7.—Increase of cancer.

We feel, then, that the opinion of a competent radiographer should carry much weight. It is doubtful whether we would diagnose cancer of the lung if our roentgen-ray report was returned with a definite expression of opinion that the lesion was not malignant.

CAUSATION

The opinion of the early writers on tumor of the lungs was that it was due to an irritating substance that was inhaled. A case reported by Scheffler in 1770 was found among the cobalt miners in Saxony, and it was thought the dust inhaled by these miners was responsible for other cases of tumor of the lungs, which seemed to appear rather frequently in that region and in other regions. Later, when the pathology was better understood, very little was reported confirming this idea. In the very recent literature it is being attempted to show that the epidemic of influenza of 1918 and subsequently was a determining etiologic factor. It appears that papers on this subject in the last eight years, twelve of which we have consulted, have called attention to the fact that the incidence of carcinoma of the lungs has been higher since the epidemic of influenza. Some go so far as to say that they believe that during the influenzal epidemic the irritation of the lungs was the outstanding condition which localized the subsequent carcinomas.

This seems more reasonable than some of the other explanations that have been suggested, such as cigaret smoking, or irritating gases from automobiles, or gases resulting from the extensive use of asphalt in the construction of public highways.

Table 5.—*Incidence of Carcinoma of Lung According to Symmers* *

Years	Necropsies	Cases
?-1917	5,000	3
1917-1919	2,000 (?) 3,000 (?)	2
1919-1925	6,000	29

* To be compared with table 1.

influenza. Of our seventeen cases, only two occurred before 1918, only two during 1918, and the remaining thirteen after 1921; but we have also collected our cases of secondary carcinoma of the lungs (twenty-five in all), which have occurred since records were begun in either clinic, and twenty-one of these have occurred since 1918. We find, however, that only five or possibly six of the patients had had influenza.

This observation, if it has any value at all, throws a certain doubt on the relation between carcinoma of lung and infection of the lungs, especially influenzal infection. However, according to our own statistics and those of other observers, it seems evident that during a period beginning about 1918 and extending to the present time, there has been a definite increase of carcinoma of the lungs.

Table 6.—*Secondary Cancer of the Lung (Pittsburgh Series)*

No.	Age	Sex	Date of Admission	Primary Lesion	Date of Operation	Infection in Lung	Date of Lung Involvement	Roentgen-Ray Examination	Effusion	Death	Duration, Mos.	Necropsy; Lung Involvement
1	46	♀	Nov., 1916	Left breast	Jan., 1914	No	Nov., 1916	Right, yes	Right, yes	Feb., 1917	4	None
2	49	♀	May, 1916	Gallbladder	None	No	Oct., 1915	Right, yes	Right, yes	July, 1916	9	None
3	63	♀	Oct., 1918	Right breast	Oct., 1916	Influenza, 1918	Aug., 1918	Right, yes	Right, yes	Oct., 1923	3	None
4	47	♀	March, 1919	Right breast	July, 1918	Recent influenza	Nov., 1918	Right, no	Right, yes	March, 1919	9	None
5	43	♀	June, 1919	Left breast	June, 1919	No	June, 1922	Left, yes	Left, yes	Nov., 1922	6	None
6	47	♀	Oct., 1920	Left breast	None	No	?	Right and left, yes	Right and left, yes	Sept., 1920	?	None
7	50	♀	Dec., 1920	Right and left breast	None	No	Dec., 1919	Left, yes	No	Dec., 1920	12	None
8	42	♀	May, 1922	Right and left breast	Oct., 1920	Influenza, 1921	May, 1922	Right and left, yes	No	July, 1922	3	None
9	68	♀	July, 1922	Right breast	July, 1916	Pneumonia	July, 1922	Right and left, yes	Right and left, yes	Feb., 1923	12	None
10	40	♂	March, 1923	Stomach	None	No	June, 1923	Right and left, yes	No	Aug., 1923	3	None
11	62	♀	April, 1923	Right breast	June, 1921	No	Jan., 1923	No	No	Alive, April, 1923	3	None

Table 7.—*Secondary Cancer of the Lung (Clifton Springs Series)*

No.	Age	Sex	Date of Admission	Primary Lesion	Date of Operation	Infection in Lung	Date of Lung Involvement	Roentgen-Ray Examination	Effusion	Death	Duration, Mos.	Necropsy Lung Involveme
12	53	♀	Jan., 1920	Breast fibroadenoma	1903	None	Oct., 1919	Yes	No	Nov., 1920	12	Yes, botl lungs
13	56	♀	March, 1920	Right breast	March, 1920	No note	March, 1920	Both lungs	No	Jan., 1921	10	No
14	61	♂	May, 1920	Right hypernephroma	No	None	?, 1920	Right diaphragm high	No	....	?	
15	56	♀	Oct., 1920	Right breast	Nov., 1920	No note	Feb., 1924	Right base, left hilum	No	Alive	?	Alive, Feb 1924
16	66	♂	March, 1921	Colon	No	No note	March, 1921	Negative	No	May, 1921	2	Yes, both lungs
17	72	♀	Nov., 1921	Pancreas	No	Pleurisy, 1906, influenza, 1906	Dec., 1921	Both lungs left base	No	March, 1922	3	Yes, fluid che both lung
18	63	♀	June, 1922	Both breasts	1916	None	Dec., 1921	Both lungs solid mass	No	Alive	?	Alive, Feb. 1924
19	62	♂	Aug., 1922	Liver	No	Cough	Aug., 1922	Base right lung	No	Alive	?	Alive, Aug. 1922
20	63	♀	Nov., 1922	Liver	No	Grip, 1892, bronchitis, 1922	Aug., 1922	None	No	May, 1923	10	Yes, both lungs
21	25	♀	Dec., 1922	Ovary	No	No note	Oct., 1921	Both bases	No	Jan., 1923	14	Yes, both lungs
22	54	♀	Jan., 1923	Left breast	Jan., 1923	None	Bronchitis after operation	Right lung	No	July, 1923	6	None
23	71	♂	Sept., 1924	Gallbladder	Sept., 1924	Cough	July, 1924	Both	No	Oct., 1924	3	Yes, both
24	55	♀	March, 1925	Right breast	1917	No note	Feb., 1925	Right base	No	Alive	?	Alive, Marcl 1924
25	81	♀	Jan., 1924	Pancreas	No	No note	?	Both	No	June, 1925	?	Yes, fluid ches right lung

Douglas Symmers of Bellevue Hospital informs us that before 1917, in about 5,000 necropsies, he encountered carcinoma of the lungs only three times; from July, 1917, to July, 1919, only two times; and since July, 1919, twenty-nine malignant tumors of the lungs were encountered. The number of necropsies from 1919 to 1925 was about 6,000, according to his figures.

It appears from our experience that we can furnish additional evidence of the increased incidence of carcinoma of the lung since the 1917-1918 epidemic of

The question has arisen with us whether this increased incidence during the period mentioned is peculiar to the lungs only, or whether there may not be the same increase of carcinoma of other organs or tissues of the body during the same time. We therefore studied all the cases of carcinoma that occurred in both the Pittsburgh and Clifton clinics since 1915, and found that there has been a gradual but marked increase of the occurrence of cancer in both clinics (fig. 7). We also consulted the mortality statistics of the registration area of the U. S. government and found that after 1915 there has been the same decided increase. From these data and from the cases of primary and secondary carcinoma of the lungs reported in this paper, we established a graph which is shown in figure 7. It will be seen that the increase of carcinoma of the lungs during the last ten years is proportionately less than in carcinoma of other parts of the body.

It would seem to us that this would be a weak point in the theory of increased lung cancers due to inhalation of tar and oil particles of oiled roads put forward by Staehelin[5] and by Hueper.[6]

CONCLUSIONS

1. The increase of carcinoma of the lungs during the last ten years is not peculiar to that organ.

2. There may be no more relation between this increase and the influenzal epidemic of 1917 and 1918 than there is between it and any other unusual strain, such as the Great War, which was imposed on our civilization about that time. This seems to us a more reasonable explanation than has yet been brought to our attention.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. MEADER, RABINOWITZ, AND LICHTY, WRIGHT AND BAUMGARTNER

Dr. Paul H. Ringer, Asheville, N. C.: While we can usually make a satisfactory differential diagnosis between the subacute pulmonary infection and the definitely tuberculous pulmonary infection, the type of case with which Dr. Meader is dealing is the borderline case. In these cases the symptoms seem to fuse into one another until it becomes increasingly difficult to discover a sharp line of demarcation. It is becoming harder to decide definitely whether the case is one of tuberculous or nontuberculous infection. While admitting the criterion for roentgen-ray diagnosis which Dr. Meader sets forth, I fear that with the status of roentgen-ray technic and of interpretation throughout the country there is going to be much difference of opinion, and by no means a unanimity, as to the nature of the various shadows on the plate. It is not wise to take a hard and fast stand with regard to the radiologic findings in these cases. The râles heard in these borderline cases are not to be trusted as a definite diagnostic point. Many of these patients, furthermore, will not complain of any definite chest condition. Many of them will have no cough and no expectoration. They complain of the symptoms of fever and fatigue, and will have a temperature of 99 or 99.2 F., which means a low grade of fever and a high degree of lack of endurance. It is obvious that the patient is the victim of a low grade toxemia. Every patient presenting rather equivocal symptoms, whether definitely suggestive of a chest condition or not, should be searched for foci of infection in the tonsils, teeth and so forth. With regard to tuberculin reactions and intracutaneous tests, I cannot feel that a positive intracutaneous test is of value, as a tuberculin test denotes tuberculin infection and by no means is positive proof of tuberculous disease.

Dr. L. J. Moorman, Oklahoma City: Dr. Meader has discussed a very interesting problem, the solution of which is most difficult. It might be discussed from two points of view: In regard to nomenclature, I feel that with our present knowledge, the difficulties are insurmountable. With reference to differential diagnosis, we are almost equally confused. Dr. Meader has clearly set forth the differential points, and yet they are necessarily so hedged about by exceptions that we find no solid ground on which to stand. Until more definite diagnostic criteria can be established, we must often remain in doubt. We may find comfort in the time-worn aphorism of Hippocrates, "Experience is fallacious and judgment difficult." And yet we know full well that the very foundation on which diagnosis stands is based on experience subject to the exercise of judgment. Dr. Meader has well said that, with our present diagnostic means, decision must rest largely on the individual judgment or experience. In Oklahoma City, we have examined in the dispensary about 3,000 children, all the time keeping as many as 600 under observation. Some of these children have been followed nine years. They have been examined because they present symptoms suggesting the possibility of tuberculosis or because they are physically substandard, or because of contact with open tuberculosis. We found the question of contact very important, and that its significance varied with the following factors: the age at the time when contact begins, the duration of contact, and the environment under which the contact exists. We also found the roentgen ray of great diagnostic value. Our standards with reference to the interpretation correspond to those given by Dr. Meader. We find that, in the light of these standards, our roentgen-ray findings seem to parallel our conclusions with reference to the significance of contact. I should like to emphasize what Dr. Rabinowitz said about the diagnostic value of tuberculin tests, especially in adults.

Dr. John M. Blackford, Seattle: Inflammatory rheumatism is a most peculiar disease. We know that in different epidemics (if we may use the word) the cases vary greatly as regards the seriousness of both symptoms and complications. Rheumatic pleurisy has been seen on many occasions. During our army experience with influenza, many cases of pneumonia were diagnosed only by the use of the roentgen ray. I wonder whether the doctor could give us some information on what the roentgen-ray findings are in these pneumonia cases as transient as he has described. The remarkable variation in the frequency of these pulmonary complications is most interesting, and in my own experience has not been as great as 40 per cent. All of us have heard the râles at the base which are usually found in a patient with a protracted illness who stays in bed. Certainly, these do not indicate pneumonia in a very large majority of cases. The roentgen-ray findings are doubtless difficult to obtain because of the difficulty in handling patients with acute inflammatory rheumatism. Hence, this method of diagnosis has probably not always been available. The doctor has not mentioned necropsies. He has said that the mortality is extremely small. I am sure most of us have not considered pneumonia a common complication of inflammatory rheumatism.

Dr. Felix Baum, Denver: The roentgen-ray differential diagnosis between the tuberculous and the nontuberculous lesion without clinical data is often very difficult. Umber of Berlin published very interesting roentgenograms of protracted influenza, localized in the apex of one lung, in which the roentgenologist had made the diagnosis of tuberculosis. There was a cloudiness visible in one apex, disappearing after two or three months, proving the nontuberculous character of the lesion.

Dr. E. C. Thrash, Atlanta, Ga.: Pulmonary arthritis is so mild in this connection that sometimes we overlook it.

Dr. I. D. Bronfin, Sanatorium, Colo.: A diagnosis of pulmonary tuberculosis is not infrequently made on such patients, and they are advised to go West or Southwest. If these papers will call the attention of the profession to clinical entities simulating pulmonary tuberculosis, and to the methods of differential diagnosis, thereby preventing such patients from traveling 3,000 miles to look for the elusive cure, they will have accomplished much. Dr. Meader's paper proved very interesting. However, in spite of the various diagnostic means at our disposal, we are still experiencing considerable difficulty in differentiating the nontuberculous patients of the type he described and those actually tuberculous. The tubercumet reaction has been referred to by some one. We have made a number of these tests; in fact, as a routine for a time when the serum was obtained for

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[5] Staehelin, R.: Zunahme des primären Lungenkrebses, Klin. Wchnschr. 4: 1853 (Sept. 24) 1925.

[6] Hueper: Primary Gelatinous Cylindric Cell Carcinoma of the Lung, Am. J. Path. 2: 81, 1926.

Wassermann tests, and we have not found those reactions of any value in determining the presence or absence of clinical activity. Primary pulmonary malignant conditions seem to be definitely on the increase. From 1921 to 1925 we have had seven such cases that came to us with a diagnosis of tuberculosis. One of these patients gave a history of having been treated for tuberculosis since 1904. Physical signs were practically negative. Fluoroscopy showed what seemed to be aneurysm of the thoracic aorta, with encroachment on the left upper lobe of the lung. Death was due to suicide, and the necropsy showed a well localized adenocarcinoma, apparently bronchogenic. No evidence of tuberculosis was detected.

Dr. Victor Randolph, Phoenix, Ariz.: I had the opportunity of studying twenty-five cases of primary cancer of the lungs in the departments of medicine and pathology at the University of California. Of the twenty-five cases, twenty-three came to necropsy. The other two cases did not, but were proved by thoracotomy. The percentage incidence of the twenty-three cases that came to necropsy to the total number of necropsies during that period was 1.3, which is the highest I have seen recorded except that of Eloesser, who reported eight cases of primary carcinoma of the lung in the *Archives of Surgery* in January, 1925. The etiology of cancer of the lungs certainly is of an infectious or irritative nature. The work of Haythorn has shown the possible relation of pneumonia to the production of cancer. In one of the cases at the University of California, the carcinoma arose apparently from the alveoli; and areas of interstitial pneumonia were rather definitely related to the areas of carcinoma. Goldzicher showed a definite hyperplasia of bronchial epithelium to the squamous cell type in a case of extensive diphtheritic tracheitis that extended into the bronchi. The relation of dust to the production of cancer was studied in Europe in connection with the so-called Schneeberger cancer of the lung. Many of those cases originally considered to be cancer were undoubtedly tuberculosis. However, some relation to carcinoma seems to have been proved in the later cases. Experimental carcinoma was reported in 1923 by Kimura, who used coal tars in producing cancer in the lung in guinea-pigs. The chief interest in carcinoma of the lung is probably that of diagnosis, but a number of cases have been recorded in which the cure was brought about surgically, so that the diagnosis should be made as early as possible. A number of criteria of diagnosis could be brought up which Dr. Lichty did not have time to mention. One of the differential conditions is aneurysm. Many of the small tumors that are present near the hilum may be mistaken for aneurysm. Bronchoscopy as an early means of diagnosis should not be overlooked in the bronchus type of carcinoma, which comprises a majority of the cases. Dr. Lichty is to be congratulated on the large proportion of cases that were diagnosed in his series. There is no other series in which the cases diagnosed formed so large a proportion.

Dr. Moses Barron, Minneapolis: Carcinoma of the lung has proved to be a very important subject for discussion, and more and more cases are being reported in the literature. Dr. Grove of Northwestern University, who has reported a large series of cases, believes that influenza may have had something to do with the incidence of carcinoma, although he states that in only two of his cases was there a history of a previous influenza infection. Several years ago I reported a study of thirteen cases. Since then I have reviewed the necropsy reports at the University of Minnesota and have found fourteen additional cases of carcinoma of the lungs among 3,200 necropsies, which gives a percentage of 0.44. This percentage seems to be much higher than used to be reported. However, since the report of my last series, in which the incidence was 0.9 per cent, there has been a gradual reduction in the last four years, so that there probably is a reduction at the present time in the incidence of carcinoma of the lung. It has been pointed out that the roentgen ray is of considerable value in the diagnosing and in indicating the progress of the disease. I believe that there is great danger in putting too much reliance on the interpretations of roentgenograms. I have seen a number of cases in which the suspected progress of the case as revealed by the roentgen ray had nothing to do with the tumor growth itself, but was simply the result of a secondary infection, such as bronchial pneumonia, occurring in contiguous portions of the lung. I believe that Dr. Carman, who at first thought that the roentgen ray was of great value in diagnosis, later found that there were too many conditions complicating the disease to make the roentgen-ray diagnosis certain. The loss of weight is usually not great in primary carcinoma of the lung; it is not until the advanced stages of the disease that this becomes apparent. In some cases there is a marked loss of nutrition with the development of severe anemia. Such cases prove fatal rapidly.

Dr. H. A. Christian, Boston: For about fifteen years, I have been interested in going over these cases of rheumatism from the point of view of pulmonary signs. I am not referring to pleural signs or those in the lung due to chronic passive congestion from chronic rheumatic heart disease, but to the acute lesions as Rabinowitz has described. Now they are not very infrequent in patients with severe rheumatism, particularly if they have acute cardiac and more especially pericardial lesions. It is not necessary to have large effusion. They occur apparently with a fibrinous exudate with scarcely any fluid at all. In my own experience, those pulmonary lesions have all been in the back. They have all been on the left side. In all other respects, they agree entirely with the description of the author, but in my judgment they seem to be associated in some way with the cardiac disturbance and are probably atelectatic in nature. Being in the left lower part of the back, they are, so far as the roentgen ray is concerned, in the unknown zone of the body, because the roentgen ray is perfectly helpless in telling us what is going on in that part of the lung. The heart shadow is in the way. If the body is rotated to throw the heart shadow from this region, the bodies of the vertebrae begin to conceal the area and one never gets a view of it by roentgen ray. As these patients rarely die, we know little about the pathologic condition. The physical signs are characteristic and easily made out, and if one listens at the back of the patients with an acute active rheumatism, one will find them with considerable frequency. I can make no personal statement as to whether they occur on the right side, because I have never found them except on the left side. I think, as pointed out in the paper, that they are changes of considerable clinical interest and importance, and I am surprised that more of the audience are not familiar and interested in them.

Dr. Felix Baum, Denver: In connection with Dr. Lichty's paper I should like to add some data that might prove interesting in making the roentgen-ray diagnosis of cancer of the hilum in special as well as other pathologic changes of the hilum. A normal hilum consists of pulmonary vessels, lymph nodes and bronchi. The characteristic of the normal hilum in the roentgenogram is the clear interspace between the hilum and the heart shadow, clearly noticed more on the right than on the left side. As soon as this interspace becomes diminished, hazy or filled with a dense shadow, we consider this hilum pathologic. The interspace between the hilum and the heart shadow seen in every normal lung is absent, not only in cancer, but in other pathologic changes of the hilum. As far as the etiology of cancer in general and cancer of the lungs in particular is concerned, I wish to call to attention the work of Dr. Georgine Luden at the Mayo Clinic. In a letter I received from her a week ago, she repeats the opinion expressed last month in the editorial of The Journal; namely, that the increase of cancer of the lungs is connected with the inhalation of combustion products, especially automobile exhaust gas, which contains enormous quantities of carbon monoxide. Combustion products are closely related chemically to tar products, and tar cancers were thoroughly studied long ago. But there is another etiologic factor deserving mention, that of metabolic disturbance. In an interesting article about research on cholesterol metabolism, Luden maintains that there is not merely one cause of cancer. Many and divers factors, she says, such as hereditary transmission of inadequate organs, ill balanced diets, bacterial infections and the effect of injurious chemical agents are each and all capable of producing an impairment of the functional efficiency of the endocrine glands leading to abnormal metabolic and chemical conditions in the body.

Dr. Charles N. Meader, Denver: It is always a source of satisfaction to find that one's own problems are shared by others. This paper does not pretend to be the final word in this differential diagnosis. It will serve its purpose if it calls attention to the fact that these conditions exist in a mild form, that they are not very uncommon, that they really are a source of a good deal of unhappiness and disability to these patients, and that it is well worth while to attempt at least to make the differential diagnosis, and to put the patient under treatment and get him better, whether his condition is tuberculous or nontuberculous. I entirely agree with Dr. Ringer that it is certainly unwise to attempt to base the differential diagnosis on roentgen-ray data alone. It is probably presumptuous for an internist to set up roentgen-ray criteria; and it ought to be emphasized that those suggested were to be regarded only as a part of the general study of the case, and should be evaluated with the clinical observations. This, of course, always leads to the chance that one reads in the roentgen-ray film what one finds with the stethoscope or prejudges from the history. This is a danger which must be courted, and can be avoided by consciously unprejudiced consideration of the case as a whole. It should be made perfectly clear that what the roentgen ray shows in these borderline cases is useful only as it is studied in connection with the rest of the clinical picture. That is true also of physical signs and of the symptoms. This is not the place to discuss the details of the subject of tuberculin diagnosis. It is felt that tuberculin does offer definite help in this differential diagnosis; but again it should be considered only in the light of the rest of the picture, and should not be relied on as a sole arbitrary means of differentiating these cases. No single criterion can be thus relied on; and even the most careful study may leave one still in doubt.

Dr. Meyer A. Rabinowitz, Brooklyn: It is to be remembered that when the lungs are obtainable from fatal acute cases of rheumatic infection, the lesion might be covered by changes incident to cardiac insufficiency from recent myocarditis or preexisting valvular defects, or other pulmonary complications. Trousseau called attention to the rapid disappearance of rheumatic pulmonary complications, the so-called rheumatic pneumonia. Widal has written of a special type of pulmonary lesion characteristic of rheumatic fever, and draws attention to the difficulty of studying it because patients usually recover from that type, and postmortem material is hard to obtain. Emanuel Libman, in a personal communication dated April 17, 1926, says: "When I was an intern in 1895 and 1896 I already felt that there was a pulmonary complication of rheumatism, characteristic of the disease and most likely due to the virus of rheumatic fever. I noted that when fluid was present in the pleura in rheumatic fever the physical signs resembled those found over the peculiar pulmonary lesions. The clinical picture and physical signs were much as you describe; particularly noteworthy was (an observation made in 1895 and 1896 and repeated since then) lack of sharp onset, lack of characteristic sputum of pneumonia, disappearance usually without râles, and no empyema. Physical signs were usually such as you describe. I did not make very elaborate records of them. The physical signs are very well given by you; in fact you probably have the most or only accurate description of them so far made. I never had the opportunity of making studies of pathologic material. The pleural fluid, on culture, was sterile. Studies are needed with newer bacteriologic methods, because with the streptococci being present in the blood of some patients with rheumatic fever they might well be found in the pleural fluid. I have, of course, seen a similar kind of pulmonary condition in patients not suffering from rheumatic fever, either complicating some other disease or occurring as mild forms of lobar pneumonia when that disease was prevailing. Its frequent occurrence, however, in rheumatic fever compared to any other disease, especially its frequent occurrence in cases that are not particularly severe (even in mild cases), has always made me feel that the lesion was most likely part of the rheumatic infection and not pneumonia due to the usual causes. True lobar pneumonia may, of course, as you state, occur in rheumatic fever; but it is an infrequent complication in the usual forms of that disease. How far the lesion is a congestive affair and how far inflammatory is not known. Clinically it would appear that it is often, at least, not of the usual inflammatory type of bronchopneumonia and lobar pneumonia."

Dr. John A. Lichty, Clifton Springs, N. Y.: Dr. Randolph spoke of the difficulty of making a differential diagnosis between small and occasional findings at the arch of the aorta and carcinoma in the hilum of the lung. As has been expressed several times in the paper and as shown by the history of the cases which I did not take the time to read, carcinoma of the lung is not the most rapidly progressing of the lesions of the lung. Therefore, ample time is given to make observations. If roentgen-ray examinations are to be depended on, frequent observations must be made. It is not necessary for me to go into the symptomatology of aneurysm of the aortic arch; but in studying this with the roentgen ray, one, of course, looks for the expansile property of the growth which must be differentiated from the impulse of the normal aorta to a surrounding inflammatory region. Stereoscopic examination is very helpful. With reference to bronchoscopy, we used the bronchoscope in some of our cases. In one case particularly it enabled us to see that blood was continually coming from the right bronchus, which was helpful in making the diagnosis, because there was a small shadow in the substance of the right lung. With reference to the lung shadow and roentgen-ray examination, it is our experience that quite frequently an acute inflammatory condition will arise about the malignant lesion in the lung. This may occur on account of recurrent colds and frequently occurs without any apparent reason. This nearly always increases the shadow of the tumor in the lung. When the acute condition subsides, it will be seen that the shadow becomes smaller and tends to approach the former size. It is not difficult to determine, therefore, whether the mass is actually increased. In regard to the blood examination, we feel that the blood picture is characteristic in showing a rather uniformly high leukocyte count with a high neutrophilic percentage. This is not the rule in malignant lesions in other parts of the body. As to etiology, we do not believe this matter is settled as being due to the epidemic of influenza of 1917 and 1918. Some authors have spoken of the possibility of gas from combustion engines, and coal tar in connection with the tar roads which are being built all over the country, and also of tobacco smoke as being the cause of increased carcinoma of the lung. These may be factors, but they certainly do not explain the increase of carcinoma in all parts of the body which have occurred as shown by our statistics at the same time that the increase in carcinoma of the lung has occurred. The suggestion of Dr. Barron, that the curve of cancer incidence is coming down, coincides with our experience. There are not as many cases of carcinoma of the lung or carcinoma elsewhere reported in the past year as there were two or three years ago. It is our feeling that the epidemic of influenza may have had no more effect on the increase of carcinoma of the lung than the terrific strain placed on the human race consequent to the Great War, which was at its height coincidently with the influenza epidemic.

Psychanalysis for Foes of Experimental Research.—The *Nederlandsch Tijdschrift voor Geneeskunde*, in commenting on a recent preposterous attack on antitoxin treatment of diphtheria in a Vienna antivivisection organ, remarks: "Modern psychology should investigate the fact that in so many countries the publicly paraded love for animals is associated with such hatred and lying. Who knows what mythologic complexes might be revealed by psychanalysis!"

THE UMBILICAL CORD *

NORRIS W. VAUX, M.D.
AND
WILLIAM BELK, M.D.
PHILADELPHIA

This universally present structure in childbirth has had little, if any, recent investigation. The older writers on obstetric practice and midwifery often failed even to mention the cord, other than its presence and how to ligate and sever it, which leads us to believe that little, if any, serious consideration or significance was attached to its structure.

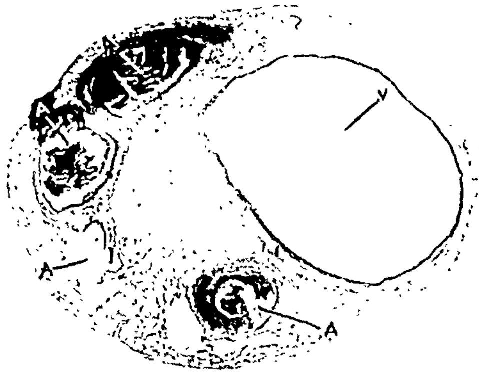

Fig. 1.—Section showing four arteries and one vein.

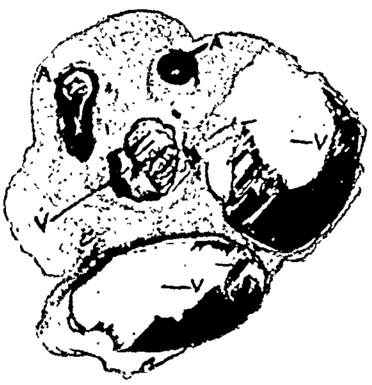

Fig. 2.—Section showing three veins and two arteries.

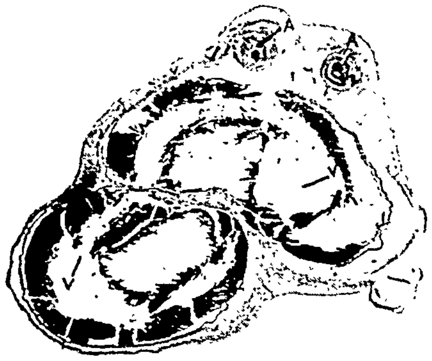

Fig. 3.—Section showing two arteries and two veins.

Further, in the works on obstetrics that embody the physiology, pathology and embryology of more recent date, there will be found little new, other than the accepted facts of long standing regarding the twists or spirals present in the cord, its length, the tensile strength, and a brief description of its formation, function and embryonic development.

Occasional abnormalities are mentioned, such as knots and abnormal attachments of the cord to the placenta.

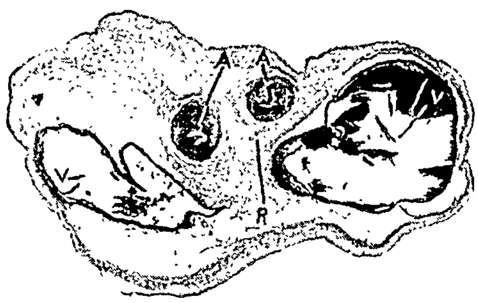

Fig. 4.—Section showing two arteries and two veins, and remnant of umbilical vesicle (*R*).

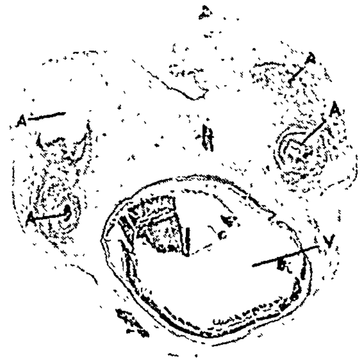

Fig. 5.—Section showing four arteries and one vein.

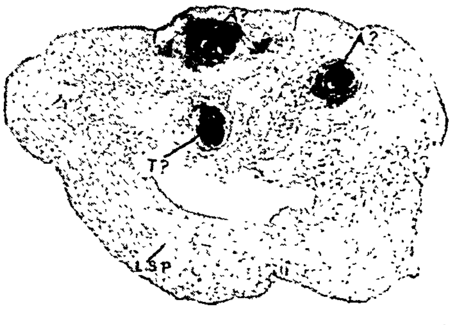

Fig. 6.—Section showing three thick-walled vessels, one thrombosed (*T*); large lymphatic spaces.

When more recent investigation and attention was brought to bear on the placenta, its structure and functions, the funis, or naval string, again attracted little or no attention, and usually was given only casual attention, nothwithstanding its being the only channel of communication existing between the fetal and the maternal structure.

It is our object to present some facts brought to light by our preliminary study and examination. While not startling, they add to the fundamentals that are universally accepted, and may bring more full and definite explanation for the presence of the unusual observations noted in our work.

The navel string has its origin in the embryologic development, the body or yolk stalk being well established, including the umbilical vesicle, about the fourth week of gestation.

In the early human embryo as described by Hirst, Minot, Bumm, Peters and others, the structures that are embodied in the formation of the cord can be easily demonstrated and recognized. The umbilical cord springs from the posterior portion or caudal end of the embryo, in one of the early stages of development. A small diverticulum of the yolk sac, the umbilical vesicle, extends or pushes its way into the mass of adjacent mesodermic cells, which with further development and projection becomes the umbilical cord. Although a true allantois is not present in the human embryo, this mesodermic layer may be said to exist, since the blood vessels, when they arise, pass by way of the allantoic rudiment through the abdominal stalk to the chorion, from which the embryo derives its nourishment. The important conclusion in the development of the umbilical cord is that the mesodermic layer connects the embryo with the chorion frondosum from the earliest embryonic stages, and in the full term cord a definite remnant of the umbilical vesicle, although not always a constant factor, is noted by the presence of a small, pearl-like body of embryonic cells embodied in the cord substance. The latter structure does not always continue throughout the entire extent of the cord.

The more prominent characteristics of the histologic structures are by no means a constant factor, and vary greatly in a large proportion of cords studied. Each cord, in fact, so differs definitely from another, that only a few positive findings can be accepted as facts.

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* From the Laboratory of the Bryn Mawr Hospital. Investigation and study carried out under the direction of Drs. William Belk, Berville Holmes and George U. Fillmore.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

This preliminary study of anatomic variations in the umbilical cord has encouraged us to continue this work, as a rather surprising number of variations have been found in the specimens examined.

The membranes of the cord appear as a thin layer of cells, from one to five deep, which have some resemblance to squamous cells, which is consonant with their ectodermic origin. The stellate cells of Wharton's jelly are more numerous in some areas than others, in places being entirely absent.

The nourishment of this structure has interested us especially. All specimens contain rather wide spaces, with clear-cut walls. In most cases these have no endothelial or other cellular lining. Conceivably these represent lymph spaces. In a few instances these spaces contained red blood cells, and in one specimen there were well formed blood capillaries. It seems necessary to suppose that a connection exists between these spaces and the main vessel from which blood or lymph is derived. It is our hope to demonstrate this connection by further injection experiments, and to determine the site both of exit and of entrance of these little nutrient vessels.

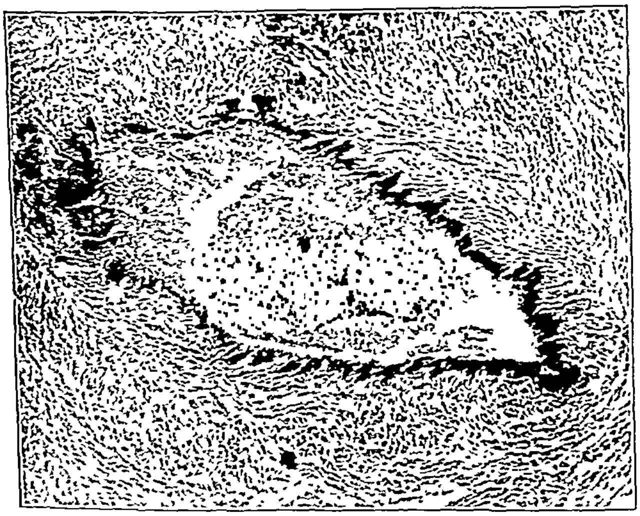

Fig 7.—Verhoeff's stain, showing elastic tissue in intima of vessel.

Near the large vessels there is a definite concentration of cells of connective tissue type, which assume a circular arrangement, and are continuous with the outer coat of the vessels. The main arteries showed pronounced variations. In two instances, five vessels were found on cross section. In one, four arteries and one vein (fig. 1), and in another, two arteries and three veins (fig. 2). In three cases, four vessels appeared. Two veins and two arteries in two (figs. 3 and 4), and one vein and four arteries in one (fig. 5). In some instances three thick walled vessels appeared, with the anatomic structure of arteries (fig. 6). Whether the increase in the number of vessels is due to branching or to anomalies extending the entire length of the cord will be determined later, if possible, by injection experiments. Although branching of the arteries was definitely determined by injections, in no instance were we yet able to demonstrate branching of the vein.

The structure of the vessels is somewhat variable. Three well defined coats appeared in the arteries of only one specimen. Generally the separation of muscular layers was not at all definite. A Verhoeff stain showed only one elastic membrane in any specimen, apparently the internal. The amount of elastic tissue also varies much in different specimens, as shown in figures 7, 8 and 9. The arteries are very distensible when in the fresh state, and show little tendency to collapse after being dilated. This is doubtless due in part to postmortem changes, but may have some significance in life when circulatory disturbances occur in utero. The valves of the arteries are generally very small notches, hardly visible to the naked eye, which occupy only a part of the circumference of the wall. When pressed on by a pointed instrument in the direction opposite that of the normal blood flow, the wall of the vessel pouches out in such a way as to fill the lumen. Where sharp angles are taken by the course of the arteries, small ridges appear, more comparable to flaps. These appear in the roentgenograms (figs 11 and 12). That these insignificant structures are competent to prevent backflow of blood was demonstrated, injection against the normal direction of flow being found impossible even with much pressure.

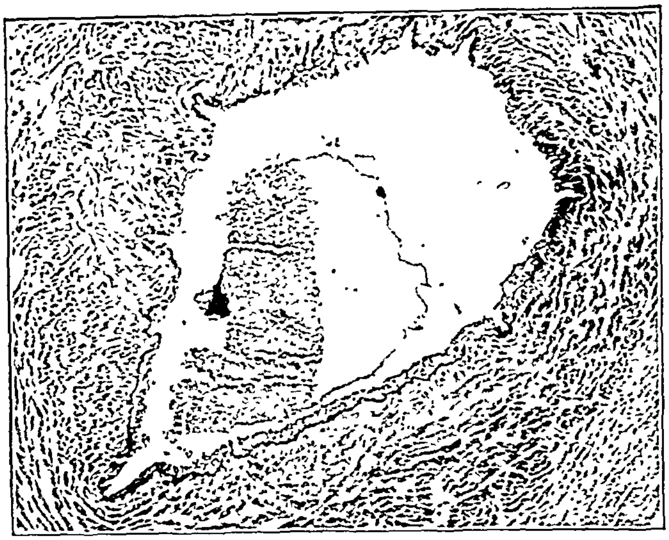

Fig 8 Verhoeff's stain, showing slight amount of elastic tissue (indicated by dark line).

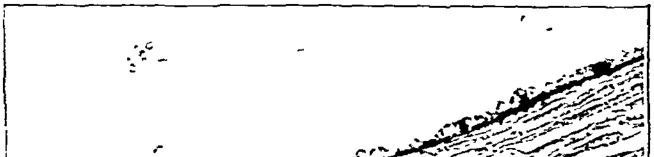

Fig 9—Verhoeff's stain of vein, showing slight amount of elastic tissue.

The veins consist of a relatively thin muscle coat, with a very thin layer of elastic tissue just under the intima. In a number of instances, veins were injected in the direction opposite to the normal flow without apparent difficulty.

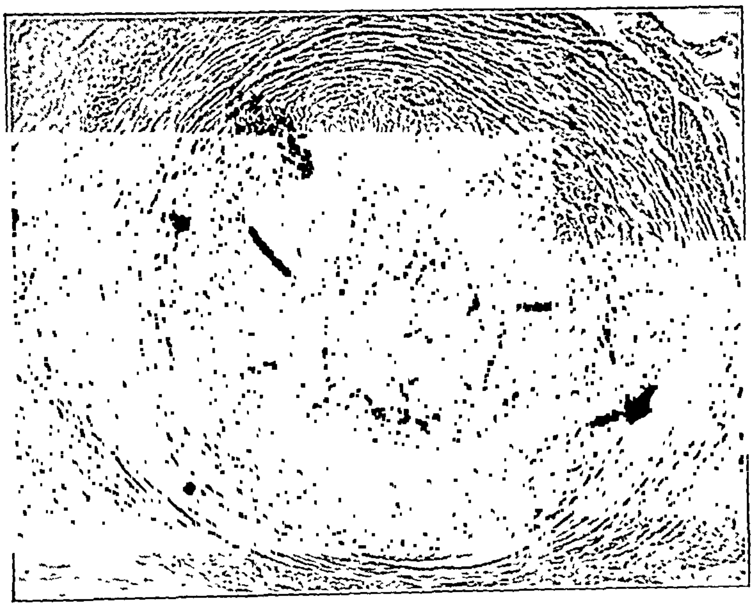

Fig. 10.—Verhoeff's stain of artery, showing no elastic tissue.

In all specimens the vessels were injected with metalic mercury and roentgenographed, a series of experiments first being carried out to show which solution or material used would be of most value in the roentgen-ray studies. Cords were dissected, the arteries and veins being individually selected. The results were very gratifying in that the metallic mercury gave a clear-cut detail and was easily handled, with little pressure necessary, in order that excessive pressure would not distort the normal or produce abnormal findings.

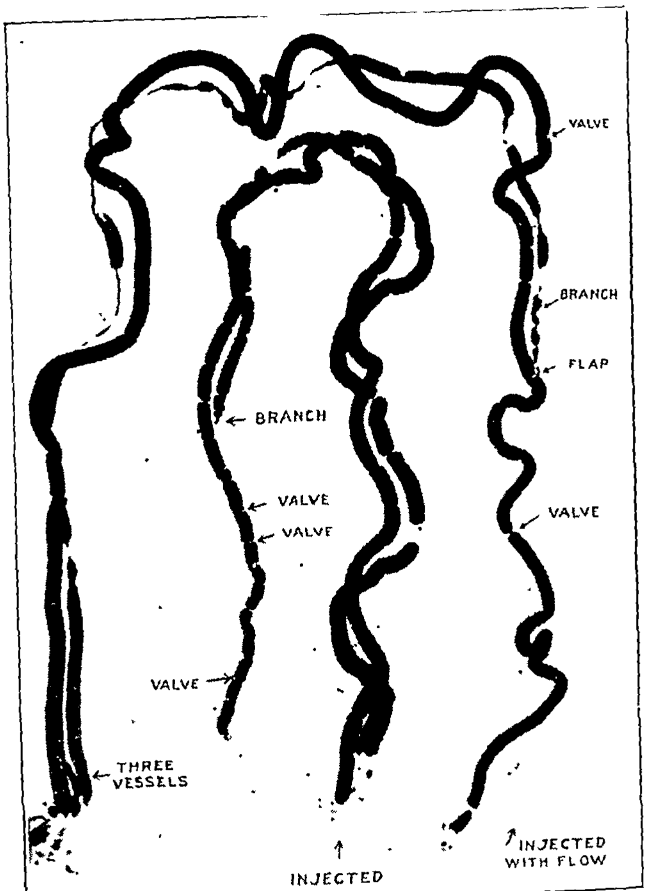

Fig. 11.—Artery injected with metallic mercury: small notches in wall of artery; branching of vessel.

The roentgenograms were made by placing the specimen at 36 inches distance, with a double intensified screen, superspeed Eastman films, one second exposure, 10 milliamperes, and a 3 inch spark gap.

In the vessels injected and subjected to roentgenography, none of these showed more than three branching vessels. However, an interesting finding was the anastomosing of the arteries by very minute channels.

It is our belief that in a further study of a large number of cords we shall be able to demonstrate that these anatomic variations and others are by no means uncommon. As far as we are aware, such a study has not previously been made. We hope finally to be able to demonstrate that these anomalies are closely associated or in part may be the causative factor associated with some of the fetal deaths or accidents of intra-uterine life.

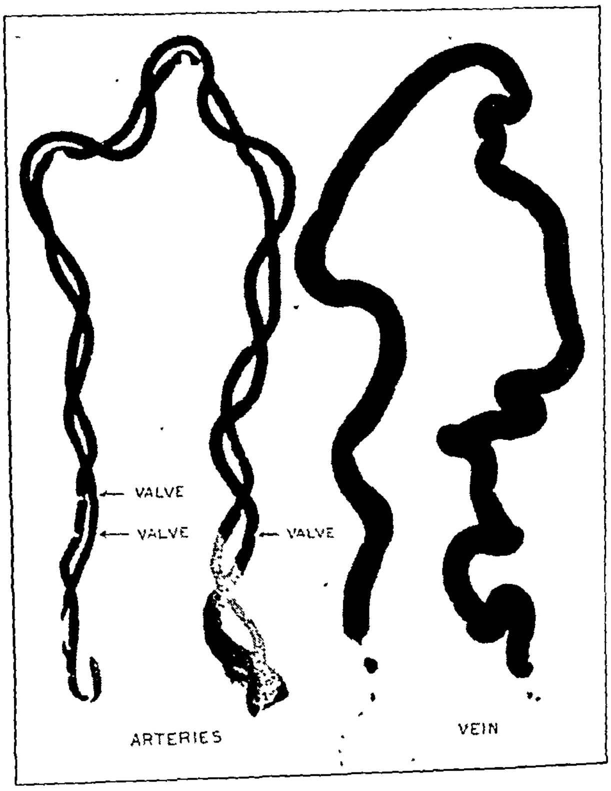

Fig. 12.—Vein and both arteries of cord injected with metallic mercury: no valves in vein.

1810 South Rittenhouse Square.

Tularemia with Conjunctivitis.—Tularemia was demonstrated by animal inoculation and by cultural and serologic methods in the sole survivor of an outbreak of a glandular febrile affection with conjunctivitis occurring in four members of a family, three of whom died without tests for tularemia having been made, either before or after death. The four patients became ill within a twenty-four hour period, and, clinically, they constituted a group which presented the same symptoms and little short of the same course and termination. Although details as to the source and method of infection are wanting, there is abundant evidence of contact with rabbits, and the proof of the cause of illness of one of the group justifies the conclusion that all were cases of tularemia. Whether certain members of the family in dressing infected rabbits transferred the infection by their hands to their conjunctiva or whether insufficiently cooked rabbit was eaten are matters of conjecture only, but the evidence seems to point to primary infection of the conjectivae.—Freese, H. L.: *Pub. Health Rep.* **41**:372 (Feb. 26) 1926.

EXOPHTHALMIC GOITER IN CHILDHOOD*

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Exophthalmic goiter is an extremely rare condition in early childhood, but becomes more common with the approach of puberty. Plummer[1] recognizes two types of hyperthyroidism in adults, exophthalmic goiter and adenomatous goiter with hyperthyroidism. The latter is rarely found in persons under 25 years of age, and has never been recorded as occurring in childhood. Plummer conceives of the clinicophysiologic complex of exophthalmic goiter "as that following the administration of thyroxin, or that associated with hyperfunctioning adenomatous thyroid plus certain notable characteristic findings that can be grouped as ocular symptoms, the characteristic nervous phenomena, and the tendency to crises which may terminate in death." According to this conception, exophthalmic goiter and hyperthyroidism in children denote the same condition, although some observers have considered them as separate entities. From the study of the metabolic rate in children with exophthalmic goiter, it has been learned that the severity of the ocular symptoms does not necessarily indicate the degree of hyperthyroidism. A child with severe exophthalmos may have a metabolic rate only slightly above normal, whereas another child with no exophthalmos may have a rate far above normal.

Between Jan. 1, 1921, and March 1, 1926, thirty cases of exophthalmic goiter in children 14 years of age or less were observed in the Mayo Clinic. Four of the patients were boys and twenty-six were girls. During the five-year period, 3,432 patients of all ages with exophthalmic goiter were observed at the clinic.

It is evident that exophthalmic goiter is being overlooked in children, possibly because of the assumption that the disease does not occur until puberty or shortly before. A diagnosis of exophthalmic goiter had been made in twenty-one of the thirty cases before the patients came to the clinic. The most striking failure in diagnosis was in the case of a boy, aged 3 years, whose symptoms had been present since he was 11 months old. Although the diagnosis was suggested to physicians by the father, exophthalmic goiter had been ruled out because of the patient's age.

REVIEW OF LITERATURE

The largest series of recorded cases of exophthalmic goiter in children is that reported by Sattler,[2] who analyzed 184 cases, 5.3 per cent of his total of 3,477 cases. In the age period from 1 to 5 years there were four cases in boys and seven in girls; from 5 to 10 years there were eleven in boys and thirty-three in girls, and from 10 to 15 years, twenty-four in boys and 104 in girls. Lewis[3] reported five cases of exophthalmic goiter in girls less than 10 years of age in a total of 1,512 patients operated on at the Mayo Clinic between 1905 and 1913. Recently, Dinsmore[4] has reported a series of forty-eight cases of hyperthyroidism, eight in boys, and forty in girls. Nine patients were from 5 to 10 years of age and thirty-seven were from 10 to 14 years. White[5] reported exophthalmic goiter in a new-born infant whose mother had the disease. Klaus[6] reported a case in an infant 9 months old. One patient in our series undoubtedly suffered his initial symptoms at the age of 11 months. Klein[7] reported three cases of exophthalmic goiter in children. Single cases have been reported by Wynter,[8] Pritchard,[9] Woodward,[10] Railliet[11] and others.

Eleven of the patients in Dinsmore's series were operated on. Buford,[12] Sawyer,[13] and Cowden[14] each report successful operation for exophthalmic goiter in a child. Heiman[15] reports three cases in children, in one of which operation was successfully performed.

ANALYSIS OF CASES

Duration of Symptoms and Age of Patients.—The duration of the symptoms, which varied from six months to eight years, indicates that frequently this disease is not recognized early or its seriousness is not appreciated. In more than half of the thirty cases the duration of the illness had been a year; in six cases, two years; and in single instances three, four, five and six years. Early recognition of symptoms is important. The age at onset in our series was less than 1 year in one case; from 1 to 5 years in seven; 6 to 10 years in eight; 11 to 12 years in nine, and 13 to 14 years in five. On admission, four of the patients were from 1 to 5 years; six, from 6 to 10 years; five, from 11 to 12 years, and fifteen, from 13 to 14 years. The age at onset indicates that more than half of the patients were 10 years or less, and on admission one third were 10 years or less.

Locality.—The patients registering at the Mayo Clinic come largely from the goiter belt of this country, most of them from Minnesota, Iowa, Illinois and Wisconsin, in the order named. It is interesting to note that seven patients in this series came from Illinois. Iowa, Minnesota, South Dakota and Canada are represented by three each; North Dakota, Indiana and Michigan, by two patients; Wisconsin, Missouri, Kansas, Montana and Pennsylvania, each by a single patient.

Symptoms.—According to Plummer, the symptoms of exophthalmic goiter can be divided into those that are caused by an excessive production of thyroxin, the normal product of the gland, and those that are in all probability caused by the secretion of an abnormal product of the thyroid gland. An increased output of thyroxin raises the basal metabolic rate, with resulting secondary manifestations, higher pulse rate, increased surface temperature and perspiration, polyphagia, and nervous fatigue. The abnormal product that is elaborated by the gland under intense stimulation is possibly an incompletely iodized thyroxin molecule. This product, according to Plummer, gives rise to the characteristic ocular and nervous changes and produces the crises which may terminate in death.

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* From the Section on *Pediatrics, Mayo Clinic*

* Read before the Section on Diseases of Children at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926

[1] Plummer, H S : The Function of the Thyroid Gland, Beaumont Lecture, St Louis, C V Mosby Company, 1926, pp 45-83

[2] Sattler, H Die basedow'sche Krankheit im Kindesalter, Graefe-Saemisch Handbuch der gesamten Augenheilkunde **9:** 615-637, 1909

[3] Lewis, W H Juvenile Hyperthyroidism, St Paul M J **16:** 91-94, 1914

[4] Dinsmore, R S Hyperthyroidism in Children, Surg. Gynec Obst. **42:** 172-176 (Feb) 1926

[5] White, Clifford: A Foetus with Congenital Hereditary Graves' Disease, J Obst. & Gynec Brit Emp **21:** 231-233, 1912

[6] Klaus, O Basedow bei einem neun Monate alten Kinde, Prag. med Wchnschr **39:** 515, 1914

[7] Klein, Sidney: Goiter in Children, Arch. Pediat **39:** 786-798 (Dec) 1922.

[8] Wynter, W E : Graves' Disease in a Boy, Commencing at Age of Ten, Proc Roy Soc Med , Clin Sec. **4:** 155, 1911

[9] Pritchard, E , and Stephenson, S A Case of Graves' Disease in a Lad Aged Eight, Proc Roy Soc Med , Sect Dis. Child **3:** 73, 1909-1910

[10] Woodward, H L Exophthalmic Goiter in a Child of Twelve Years, Lancet Clinic **112:** 680, 1914.

[11] Railliet, M G Goitre exophthalmique chez une fillette de sept ans heredite similaire, Arch de med d enf **17:** 682-690, 1914

[12] Buford, R K · Hyperthyroidism in Children Before Puberty, J A. M A **78:** 1533-1534 (May 20) 1922

[13] Sawyer, W A · Toxic Goiter in Girl Ten Years Old, Ann. Surg. **64:** 371-375, 1916

[14] Cowden, C N : Exophthalmic Goiter in the Child, South Surg Tr. **36:** 75-84, 1923.

[15] Heiman Henry Exophthalmic Goiter in Childhood with Some Unusual Manifestations, Am J Dis Child **26:** 216-222 (Sept) 1923.

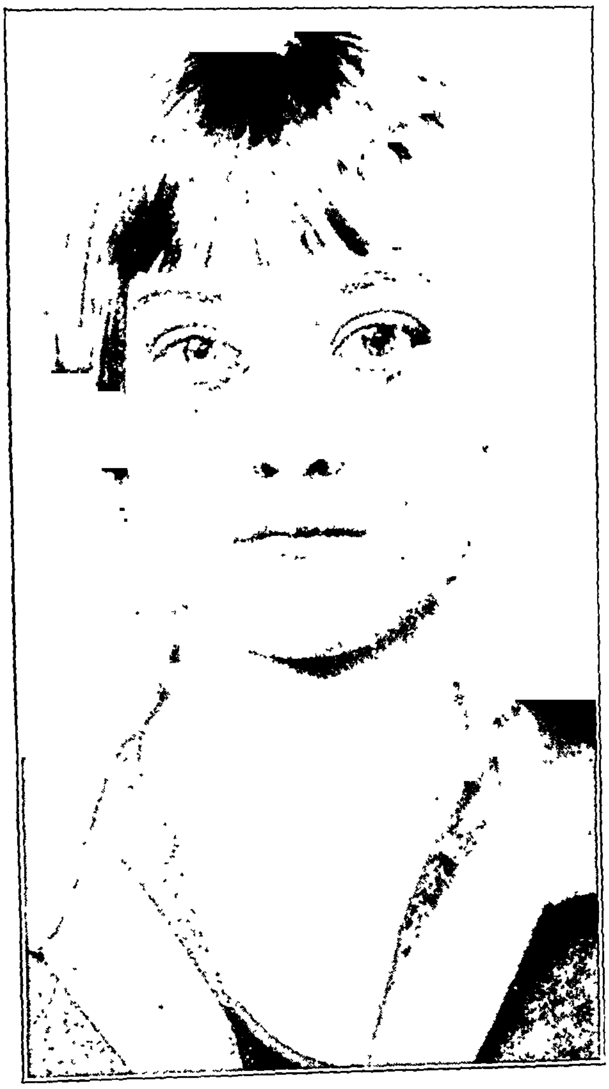

Fig. 1.—Exophthalmic goiter in a girl of 14, showing typical exophthalmos.

The ocular change may be the typical exophthalmos (fig. 1) which gives the disease its name, or a peculiar stare. The nervous phenomena are those of hyperirritability and fatigue, and purposeful choreic movements. There is the same urge toward movement as in chorea, but in exophthalmic goiter the movements are purposeful and coordinated. The crises are marked by prostration, vomiting and diarrhea. The manifestations of the disease in childhood correspond very closely to those described in the adult.

Nervousness was given as the first symptom by thirteen patients, thyroid enlargement by nine, tachycardia by four, exophthalmos by two, and gastro-intestinal disturbances by one; no definite initial symptom was noted by one. Nervousness was the second symptom in seven cases, exophthalmos in five, thyroid enlargement in three, polyphagia in three, tachycardia in two, gastro-intestinal disturbances in one, and tremor in one (table 1). Sattler lists enlargement of the thyroid as the first symptom in half of his cases; exophthalmos was the first symptom in ten cases, and tachycardia in six. Dinsmore mentions nervousness as the first symptom, but does not state the number of cases in which it was found. It would seem, therefore, that nervousness associated with enlargement of the thyroid gland is very suggestive of hyperthyroidism in children.

The symptoms associated with hyperfunction of the thyroid gland are well known, but apparently, in the series of cases of exophthalmic goiter of children reported previously, no account has been taken of the relative frequency of symptoms.

Tachycardia was noted in 100 per cent of the cases. In one case the pulse rate was 96, in six cases between 100 and 125, in nineteen between 126 and 150, and in four higher than 150.

The thyroid gland was definitely enlarged (fig. 2) in all but two cases. It was uniformly enlarged and usually of moderate size. No nodules were palpated, nor were adenomatous areas found in the glands removed at operation.

Table 1.—*Order of Onset of Symptoms*

Symptoms	First	Second
Nervousness	13	7
Enlargement of thyroid	9	3
Tachycardia	4	2
Exophthalmos	2	5
Gastro-intestinal disturbances	1	1
Tremor	..	1
Polyphagia	..	3
Indefinite	1	1
Not noted	..	7

All but two patients complained of nervousness. Emotional instability was perhaps the most marked feature. Tears and laughter alternated rapidly. There was considerable variation in muscular activity, but the natural mobility of children makes the interpretation of this symptom difficult.

Exophthalmos was definite in twenty-five of the thirty cases, and in one of the remaining five there was the characteristic stare. The stare is fully as important as the exophthalmos and may be followed by exophthalmos. That the diagnostic significance of the stare is not fully appreciated is seen from Holt and Howland's[16] statement that it is a symptom of hyperthyroidism but not of "Graves' disease." Its presence in exophthalmic goiter and its absence in cases of hyperfunctioning adenomatous goiter relate it definitely to dysfunction of the thyroid. Its rapid disappearance under the administration of iodine, as shown by Plummer, also indicates its relation to the abnormal thyroxin molecule produced by the thyroid and constitutes the most characteristic feature of the disease. The frequency of the other symptoms characteristic of exophthalmic goiter was: bruit over the neck, 70 per cent; hyperhidrosis, 67 per cent; tremor, 57 per cent; loss of weight, 53 per

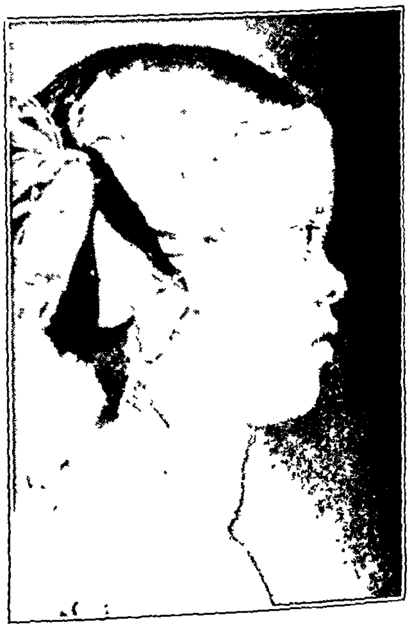

Fig. 2.—Enlargement of the thyroid.

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[16] Holt, L. E., and Howland, John: The Diseases of Infancy and Childhood, New York, D. Appleton & Co., 1917, pp. 888-890.

cent; polyphagia, 50 per cent; weakness in the quadriceps muscles, 47 per cent; gastro-intestinal disturbances, 47 per cent, and dyspnea, 40 per cent (table 2).

Special attention is called to the weakness of the quadriceps femoris in these patients. This can be readily tested by asking the child to step up on a chair. The average child steps up without effort, raising himself slowly. The child with exophthalmic goiter, however, must get a start and steps up with effort. The increased appetite associated with loss of weight which occurs in spite of increased consumption of food is also characteristic of exophthalmic goiter. The gastro-intestinal crisis of exophthalmic goiter is likely to be interpreted as gastro-enteritis, especially when it occurs in a child in the first year of life. The feeling of warmth is usually marked, the patient objecting to the amount of clothing that he wears. The reserve of the heart during childhood probably accounts for the mildness of the dyspnea on exertion. These children are able to run about in a state of toxicity that would incapacitate the adult.

Table 2—*Frequency of Symptoms*

Symptoms	Cases	
	Number	Per Cent
Tachycardia	30	100
Nervousness	28	93
Thyroid enlargement	28	93
Exophthalmos	25	83
Bruit	21	70
Hyperhidrosis	20	67
Tremor	17	57
Loss of weight	16	53
Polyphagia	15	50
Weakness in quadriceps	14	47
Gastro-intestinal disturbance	14	47
Dyspnea	12	40

Sattler is handicapped in calculating his percentages because his series included numerous cases reported by other observers. Enlargement of the thyroid was a symptom in 96 per cent of his cases, tremor in 51 per cent, exophthalmos in 39 per cent, and tachycardia (pulse rate higher than 120) in 25 per cent. Nervousness was marked in 14 per cent, absent in 9 per cent, and not mentioned in more than 50 per cent. Dyspnea was present in 7 per cent, gastro-intestinal disturbances in 6 per cent, loss of weight in 6 per cent, and bruit in only 2 per cent. Dinsmore's figures are so incomplete that it is impossible to make comparisons except for tremor, present in 54 per cent of his cases, and loss of weight, noted in 32 per cent. From the frequency of the symptoms characteristic of the severe form in the Mayo Clinic series of cases as compared with that reported by Sattler, it is evident that our cases were of a much more severe type than his. A comparison with Dinsmore's series is unfortunately not possible because of his lack of data.

There are striking differences between my percentages and those of Sattler. His figure for the frequency of exophthalmos is 39 per cent, whereas my figure is 83 per cent. Tachycardia (pulse rate more than 120) was found in 25 per cent of Sattler's cases and in 80 per cent of mine. Bruit was found in 2 per cent of Sattler's cases, in 54 per cent of Dinsmore's, and in 70 per cent of mine.

Metabolic Rates.—The literature contains but few reports of determinations of basal metabolic rates in children with exophthalmic goiter. Accurate clinical standards for children are not at this time available, although Sandiford and Harrington[17] have made a preliminary report of rates in about 150 normal children which seem to fall midway between the figures of Du Bois and those of Benedict and Talbot calculated for surface area. Our rates calculated by the Du Bois height-weight standard are, therefore, from 5 to 10 per cent too high. A reading of 0 might represent a very definite increase in the metabolic rate, and a reading of — 15 be normal. This is of particular importance in interpreting the low readings for certain children after the administration of compound solution of iodine (Lugol's solution) and after thyroidectomy, and which might be misinterpreted as indicative of hypothyroidism.

The rates + 12, + 20 and + 52, in the three cases reported by Heiman, were taken by the Tissot method of indirect calorimetry, and calculated according to the Benedict-Talbot standards. Dinsmore gives no metabolic rates for his patients and emphasizes the difficulty of making the determinations. The determinations in my series were made by the Boothby and Sandiford[18] gasometric method and calculated by the Du Bois height-weight standards. Metabolic rates were determined in all cases except that of the boy of 3 years and of the patient who had lobar pneumonia on admission and died the second day. The adjustment of the mask was the principal difficulty in making the test on young children. The first determinations were frequently high, but as soon as the child became used to the test, satisfactory readings were obtained. In table 3 are given the number of determinations and average rates of fourteen patients on arrival at the clinic. The number is sufficient to show that the basal metabolic rates are markedly increased, particularly since the norm is probably from 5 to 10 per cent lower. The increase in rate is not necessarily related to the intensity of the exophthalmos, as is shown by the low reading in a case of marked exophthalmos (case 19, table 4) and by the high readings in case 5 (table 3) and in case 17 (table 4) without definite exophthalmos. Just as soon as satisfactory readings had been obtained, iodine treatment was started on all patients coming to the clinic after 1922. In that year Plummer introduced the use of iodine in the treatment of exophthalmic

Table 3.—*Basal Metabolic Rates of Patients Receiving Compound Solution of Iodine* *

Case	Rates Before Administration		Rates After Administration		Reduction of Rate
	Determinations	Average	Determinations	Lowest Rate	
1	3	+39	7	+17	22
2	1	+23	2	+16	7
3	1	+28	17	— 7	35
4	1	+31	1	+ 8	23
5	1	+55	6	+18	37
6	2	+45	3	+33	12
7	2	+32	2	+13	19
8	1	+17	2	— 1	18
9	1	+34	2	+18	16
10	2	+23	3	— 8	31
11	2	+13	5	— 1	14
12	2	+11	3	+11	0
13	2	+45	2	+31	14
14	2	+21	2	— 1	22

* Six patients, on admission, had readings of —2, +59, +31, +42, +58 and +40, respectively.

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[17] Sandiford, Irene; and Harrington, Ethel R.: Preliminary Report on the Basal Metabolism of 157 Normal School Children Between the Ages of Five and Seventeen Years, J. Biol. Chem. 63: 35-37, 1925.

[18] Boothby, W. M., and Sandiford, Irene: A Laboratory Manual of the Technic of Basal Metabolic Rate Determinations, Philadelphia, W. B. Saunders Company, 1920.

goiter. The effect of iodine on the reduction of the basal metabolic rate is shown very strikingly in table 3. In only one of fourteen cases was there no reduction; in the others it varied from 7 to 37 points. In five cases the rates were below normal after administration of iodine. In table 4, the rates of five patients before and after thyroidectomy are given. In table 5 are given the rates of three patients who improved so markedly after receiving compound solution of iodine that operation was not necessary.

Diagnosis.—The diagnosis of exophthalmic goiter in childhood is based on (1) symptoms indicating an increase in metabolism, such as tachycardia, excessive perspiration, and loss of weight in spite of adequate food intake; (2) toxic symptoms, such as nervousness, hyperirritability, fatigue, exophthalmos and the gastro-intestinal crises; (3) enlargement of the thyroid and local bruit, especially in the region of the superior thyroid artery; (4) increased metabolic rate, and (5) the reduction of the rate and rapid disappearance of toxic symptoms after the administration of large doses of iodine. The effect of iodine on the nervous symptoms is considered by Plummer as perhaps the most valuable test in the diagnosis of a mild case of exophthalmic goiter.

Exophthalmic goiter is perhaps most difficult to distinguish from adolescent goiter found in nervous, irritable, high-strung girls. Such patients have swelling of the thyroid, often with thrill and bruit, are nervous and are easily fatigued. The pulse rate may be higher than normal, especially during examination. There is, however, no exophthalmos or stare. The basal metabolic rate is normal or low. There is no change in the rate on the administration of iodine, and the goiter may disappear rapidly on the administration of thyroid extract. So-called toxic goiters reported cured by the administration of thyroid extract may be of this type.[19]

REPORT OF TYPICAL CASES

Case 15.—A girl, aged 8, from Iowa, who came to the clinic, July 17, 1923, had had measles, mumps and varicella. The tonsils and adenoids had been removed. A swelling of the neck had been evident for the past three years. According to the mother, the heart action had been rapid and the child had been nervous.

She was well developed but was 7 pounds (3.2 Kg.) underweight. There was slight exophthalmos, and slight symmetrical enlargement of the thyroid. The pulse rate was 94. There was no weakness in the quadriceps muscle, or tremor. Bruit was present over the thyroid, more pronounced on the left. The basal metabolic readings were + 33, + 4 and + 15. She was given compound solution of iodine, 3 drops daily. The child's progress is detailed in table 4. The metabolic rate rose after the administration of 2 grains (0.13 Gm.) of thyroxin daily without, however, an improvement in the general condition. With a rate of —31, she feels well and is better, the mother thinks, than when taking thyroid extract.

Table 4.—*Basal Metabolic Rates of Patients Receiving Compound Solution of Iodine After Thyroidectomy*

Case 15, Girl, Aged 8 Years			Case 16, Girl, Aged 7 Years			Case 17, Girl, Aged 14 Years			Case 18, Boy, Aged 10 Years			Case 19, Girl, Aged 5 Years		
Date, 1923	Basal Metabolic Rate	Comment	Date, 1925	Basal Metabolic Rate	Comment	Date, 1923	Basal Metabolic Rate	Comment	Date, 1922	Basal Metabolic Rate	Comment	Date, 1922	Basal Metabolic Rate	Comment
7/18	+33	Admission	8/ 5	+13	Admission	5/31	....	Iodine started	12/19	+34	Admission	10/17	+16	Admission
7/19	+ 4		8/ 6	+21	Iodine started	6/ 1	+47			+30		10/18	....	Thyroidectomy
	+15		8/17	— 8		6/ 4	+10		12/22	+25		1923		
7/21	+ 6		9/15	—14		6/ 5	+ 9		12/27	+59	Iodine started	5/ 4	+ 6	
7/24	+ 8		9/18	....	Thyroidectomy	6/ 6	+14		12/29	+21		6/ 1	+ 6	
7/25	....	Iodine started	10/ 6	....	Dismissed; iodine to be continued	6/ 8	0		1923			1924		
8/16	—16		11/17	—26		6/ 9	— 6		1/ 2	+19		4/23	+ 5	
8/18	—10					6/11	....	Thyroidectomy	1/ 8	+26		4/24	....	Iodine started
10/24	— 7					6/18	—15		1/16	....	Ligation	4/25	+ 5	
11/ 1	—11					6/26	—27		1/23	+40		5/19	—24	
11/ 3	....	Thyroidectomy							1/27	....	Thyroidectomy	10/ 2	+ 2	Iodine for 8 weeks
11/ 9	—37								1/31	....	Iodine continued	1925		
11/17	—27								2/ 9	+15		6/ 4	+18	
1924									2/14	+ 9		6/ 5	— 5	
6/21	—37								4/ 3	+ 5	Iodine to be continued for alternate weeks	6/ 8	—12	
6/25	—41									+11		6/ 9	+ 2	
11/ 5	—21											6/10	....	Iodine resumed
11/ 6	....	Desiccated thyroid started, 1 grain										10/ 1	....	Iodine discontinued
12/16	—23											10/14	—21	
1925												10/15	—18	
4/30	—21											10/16	—16	
5/ 1	—20													
5/ 4	....	Thyroid discontinued												
7/ 8	—27													
7/ 9	—34	Thyroid resumed, 2 grains												
7/20	—17													
8/11	— 9													
8/12	....	Thyroid discontinued												
10/27	—31													

Table 5.—*Basal Metabolic Rate of Patients Not Operated on, Treated by Compound Solution of Iodine Alone*

Case 20, Girl, Aged 11 Years			Case 22, Girl, Aged 5 Years			Case 23, Girl, Aged 9 Years		
Date, 1925	Basal Metabolic Rate	Comment	Date, 1925	Basal Metabolic Rate	Comment	Date, 1924	Basal Metabolic Rate	Comment
6/ 4	+24	Admission	11/ 2	....	Admission	1/23	+ 2	Admission
6/ 6	+13		11/ 3	+33		1/24	....	Iodine, 5 drops
6/ 8	+14		11/ 4	+27	Iodine, 10 drops three times daily	1/29	—13	
6/ 9	+18		1926			2/ 4	—10	
6/10	....	Iodine, 10 drops	1/ 9	....	Iodine discontinued	2/ 6	....	Iodine, 10 drops; sent home
7/21	— 3		1/12	+16		3/20	....	Returned; iodine not given for a week
7/22	— 6	Iodine continued	1/13	+ 5	Iodine resumed	3/21	—10	
10/ 1	....	Iodine discontinued				3/22	—14	Iodine for alternate weeks
10/14	+13							
10/15	+12	Iodine resumed						
10/16	+22							

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19. Abt, I. A.: Pediatrics, Philadelphia, W. B. Saunders Company 4:680, 1923.

Case 20.—A girl, aged 11, from Illinois, who came to the clinic, June 4, 1925, had one sister, whose case is also included in this series, who suffered from exophthalmic goiter. The patient had had the usual diseases of childhood. The tonsils and adenoids had been removed when she was 5 years of age. She had had numerous boils at various times. One year before, the mother had noticed that the child's pulse was rapid. Iodostarine, once a month, was given. For two months before coming to the clinic, the patient had received 5 drops of compound solution of iodine twice daily, with diminution in the pulse rate.

No definite exophthalmos was present, but a peculiar stare was noted. There was no tremor or bruit. The pulse rate was 120. The finger nails showed evidence of having been bitten. The basal metabolic rates were + 24, + 13 and + 14. The treatment and metabolic rates of this patient are found in table 5. When compound solution of iodine was discontinued, the metabolic rate increased, but the child's condition rapidly became normal when the medication was resumed again.

Case 21.—A boy, aged 3, from Indiana, who came to the clinic, June 17, 1925, had had measles, mumps, pertussis and chickenpox. The maternal grandmother and aunt had had exophthalmic goiter. At the age of 1 year he had had an attack of severe diarrhea, and similar attacks had occurred frequently ever since, without apparent cause. Exophthalmos had been noticed when he was 11 months of age. During the past two years his pulse rate had ranged from 120 to 140. He had gained no weight for a year, although his appetite had been excessive. He had received compound solution of iodine, 2 drops three times daily, for the preceding four weeks.

The child was very emaciated (fig. 3). The thyroid was enlarged. Thrill and bruit were present. The hair was dry. The pulse rate was 148. The boy could not get up from the floor without assistance. Basal metabolic rates could not be obtained. He was sent to the hospital and given 5 drops of compound solution of iodine four times a day. He improved to such a degree that on September 8 subtotal thyroidectomy was performed. After an uneventful convalescence he was sent home, and for the next two months he was to receive 10 drops of compound solution of iodine daily. The parents say he is doing well.

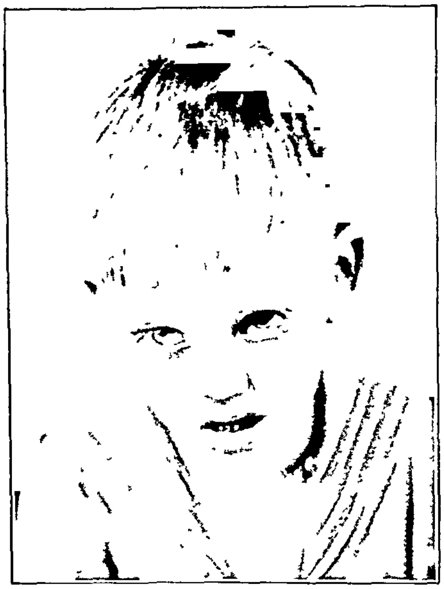
Fig 3.—Exophthalmic goiter in a boy of 3 years.

Case 22.—A girl, aged 5, from Illinois, who came to the clinic, Nov. 2, 1925, had had the usual diseases of childhood. She had been an unusually healthy child until the spring of 1925, when the mother had noticed that the child was becoming nervous and very irritable. The eyes had begun to be prominent. Heart action had seemed rapid, and the neck had become full. She was seen by several physicians, one of whom had prescribed iodine. No improvement had been noted.

On examination, the child was very nervous. The thyroid was palpable. Bruit was present. There was no tremor. The eyes were prominent. The pulse rate was 128. Basal metabolic rates were + 33 and + 25. The general condition was good. The patient's progress is given in table 5. Two months after the institution of compound solution of iodine, the child's pulse rate was 96 and her general condition greatly improved.

COMMENT

Hyperthyroidism can occur in children as a result of hypertrophy and hyperplasia of the thyroid and after administration of large doses of desiccated thyroid or thyroxin. De Quervain[20] reports a case of hyperthyroidism in a 9 year old child developing after the administration of large doses of iodine. This result is similar to the effect produced by the administration of large doses of iodine in cases of hyperfunctioning adenoma in the adult. Dinsmore, quoting Marine and Kimball,[21] reports hyperthyroidism developing in 0.5 per cent of children taking prophylactic doses of iodine. Marine and Kimball[21] definitely state that they have observed no obvious case of exophthalmic goiter developing after the use of iodine. Since hyperfunctioning adenomas do not occur in children, it would appear that only one type of hyperthyroidism is found in childhood and I feel that this form should be termed exophthalmic goiter.

The introduction of the use of iodine by Plummer in the treatment and preoperative preparation of the patient with exophthalmic goiter has been a great advance.[22] This treatment has resulted in surprising improvement in the condition of such patients and has eliminated the necessity of practically all preliminary operative procedures. Preliminary ligation was performed in only four of twenty-one patients who were operated on after the introduction of the use of compound solution of iodine. The improvement in the condition of the patient is reflected in the lowering of the basal metabolic rate and the disappearance of toxic symptoms. The administration of compound solution of iodine to fourteen of the thirty patients reduced the metabolic rate an average of 19 points (table 3). In five instances, rates that averaged about + 13 were reduced to an average of — 3. But the low rates may mean merely that our present standards are wrong, and a reading of — 3 may still indicate an increased rate for this particular group. The metabolic rate sets an objective standard for the severity of the disease which, heretofore, had to be judged entirely subjectively.

In five cases, estimations of the metabolic rate were made at varying intervals after operation. The striking feature is the low metabolic reading with apparently normal condition. A discussion of the significance of these low rates must be omitted at this time. One patient (case 19, table 4) showed definite symptoms of exophthalmic goiter for some time, in spite of practically normal basal metabolic rates. Compound solution of iodine has reduced her basal metabolic rate to — 16 and — 18, and she appears perfectly normal. Table 5 shows the successful use of iodine in three patients who have apparently recovered without operation. Two patients did not remain for treatment of any kind.

There were two deaths among the twenty-four patients operated on. One patient died from bronchopneumonia a week after ligation; the other died in intense metabolic reaction the day after thyroidectomy. This was the only death in the group of patients who received compound solution of iodine before operation. A third death occurred in a patient who was admitted to the hospital in crisis with pneumonia. Death occurred the second day after admittance.

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[20] De Quervain, Fritz: Goitre (translated from the French), New York, William Wood & Co., 1924.

[21] Kimball, O. P, and Marine, David: Prevention of Simple Goiter in Man, Second Paper, Arch. Int. Med. 22:41-44 (July) 1918; Fourth Paper, ibid. 25:661 672 (June) 1920.

[22] Plummer, H. S., and Boothby, W. M.: The Value of Iodine in Exophthalmic Goiter, Illinois M. J. 46:401-407 (Dec.) 1924; J. Iowa M. Soc. 14:66-73 (Feb.) 1924.

Recent letters from three of the patients whose cases were reported by Lewis in 1914 state that there has been no recurrence of symptoms after a period of twenty-one years. Four years after operation a third patient was free from symptoms. The other patient has not been heard from.

SUMMARY

Thirty cases of exophthalmic goiter were observed in children less than 15 years old during the period from January, 1921, to March, 1926. Compound solution of iodine, administered in doses of from 5 to 10 minims (0.3 to 0.6 cc.) three times a day, reduced the basal metabolic rates and toxic symptoms very markedly. It made preliminary operations unnecessary in the last eleven cases. Of twenty-four patients operated on, two died, one in crisis twenty-four hours after operation and the other from bronchopneumonia one week after operation.

THE SURGICAL TREATMENT OF ACUTE SUPPURATIVE PARANASAL SINUSITIS *

JOHN J. SHEA, M.D.
MEMPHIS, TENN.

The surgical treatment of acute suppurative paranasal sinusitis is of the emergency type and as such is accomplished with as little trauma as possible. No radical surgical intervention should be instituted, but only such measures attempted as will produce sufficient drainage and ventilation. The general surgeon has appreciated the folly of extensive manipulations whenever he encounters an acute suppurative condition in the abdomen, and from him we can learn a lesson. It is one thing to obtain drainage of an abscess and another to maintain this drainage. Here, again, we may imitate the general surgeon and use rubber tubing for drainage and not gauze wicks.

This paper presumes that routine medical and local procedures have failed to arrest the condition or that the disease has advanced to such a degree as to indicate immediate surgical intervention. The paranasal sinuses have an indulgence to cope with infections without serious symptoms and to return to their normal state if ventilation and drainage can be maintained. Hence the basis of proper treatment of acute suppuration of the paranasal sinuses is the reestablishment of ventilation and drainage.

MAXILLARY SINUS

The maxillary sinus in children is the most frequent site of acute suppuration of their sinuses and the most amenable to treatment. Dean has given us a very good routine for the puncture of these youthful antrums, and I follow it in obtaining a culture or in confirming the roentgenologic findings. The sinus is punctured with the straight trocar and the antrum is filled with sterile water by inserting a sterile needle on a syringe through the trocar. The child can be kept in a dorsal position with the head extended, as the shape of the antrum will allow it to be filled in this position without overflowing through the ostium. The solution is then withdrawn into the syringe and transferred into test tubes for the laboratory. If the washings indicate it, drainage is accomplished as follows: An antrum trocar knife is inserted under the inferior turbinate, and the nasal wall of the antrum is pierced in such a manner that the point of the knife will be directed upward and outward. This reduces the possibility of any injury to the external wall of the antrum, and the height of the sinus is sufficient to insure against injury to the floor of the orbit. It is important to resect the window as far posteriorly as possible, as this insures a more permanent opening, which can be accomplished by having the back of the blade serrated and using it as a saw. With a rasp, the anterior end of the window is sufficiently enlarged to allow the insertion of a rubber catheter. The catheter is introduced into the antrum over a trocar; when it is in place the trocar is slipped out, leaving the tube protruding from the window into the vestibule of the nose. The tube is then trimmed to fit into the ventricle of the vestibule, which will prevent it from being lost.

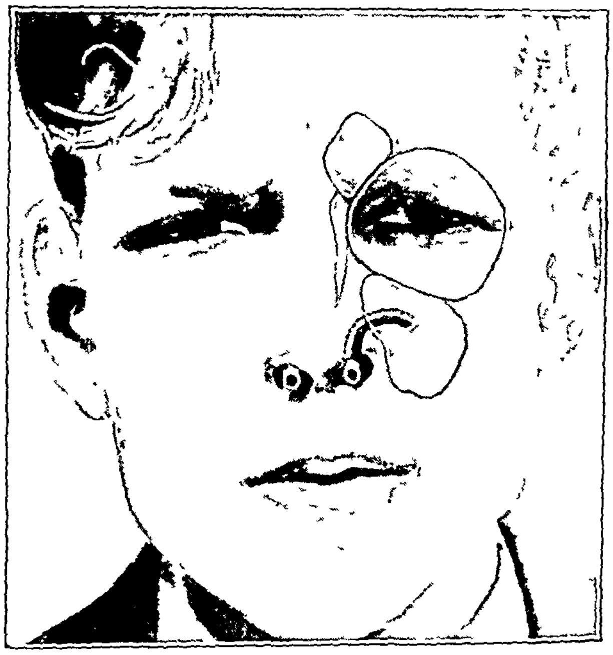
Fig. 1.—Rubber tubing drain in place for drainage of antrum.

In adults, the antrum is infected either primarily or secondarily, when it acts as a reservoir for either the anterior ethmoidal cells or the frontal sinus. In either case its drainage will be of value. In fact, it is often indicated whenever an acute frontal sinusitis requires drainage. If the interior turbinate can be pushed aside, it is wiser not to remove the anterior end. The opening through the nasal wall of the antrum should be below the attachment of the inferior turbinate. A catheter (F. 12) is inserted through into the sinus to maintain continuous drainage and ventilation. The tube also allows of ready use of suction or irrigation by the nurse. If the natural ostium can be made patent it will assure better ventilation and freer drainage, as the two openings into the sinus will allow air to enter through the ostium and the discharge to escape through the lower window.

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* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

FRONTAL SINUS

The severe pain of an acute frontal sinusitis is due to the vacuum that occurs behind the escaping discharge. When the sinus is filled to capacity the pain is one of distention, but as the sinus begins to drain the excruciating pain is caused by the lack of air within the sinus. Sometimes this vacuum can be broken by alternating suction with gentle pressure. A good example may be demonstrated by allowing oil to escape from a medicine dropper until the vacuum behind the oil is strong enough to aspirate a few bubbles of air through the remaining oil. During the painful morning hours these patients can be relieved by passing a frontal sinus catheter up through the frontal duct into the sinus, and with gentle pressure reestablishing ventilation within the sinus, and then by suction or irrigation emptying the sinus of its discharge. In the milder cases this drainage can be maintained by relieving the frontal duct of its external pressure if it is due to an impingement of the anterior end of the middle turbinate or ethmoidal cells as referred to under maxillary sinusitis by drainage of the antrum; but it is wise to preserve always the natural lining of the duct during the acute stage. In the severe cases in which internal drainage has failed or intracranial or orbital rupture is feared, I prefer to drain the frontal sinus externally. This can be accomplished with ease under local anesthesia; and when one considers that this blockage may be an inch in length, one can appreciate the impossibility of internal drainage. I use the incision of the Lynch radical frontal sinus operation and make my entrance into the sinus with a small burr. The sinus is emptied of its contents and a small catheter drain inserted through the window thus made. Later, when the acute symptoms have subsided, the radical operation can be performed without risk to the patient. On one occasion the foregoing procedure was planned in the case of a young girl with an orbital rupture, but when the bone was exposed it was found that to remove the necrotic tissue such bone work was necessary to classify it as a radical operation. The incision under these circumstances should be allowed to remain open and not sewed up, as the gaping wound will serve as a decompression for the optic nerve. The latter idea is also an indication for the external opening of a frontal sinus whenever orbital swelling has occurred. If the anterior wall of the frontal sinus is attacked during the acute stage of suppuration, an osteomyelitis of the frontal bone may occur and spread by way of the diploe. Figures 4 and 5 show the manner in which this complication may happen. In this case a double radical frontal operation was performed with a resulting osteomyelitis of the frontal bone.

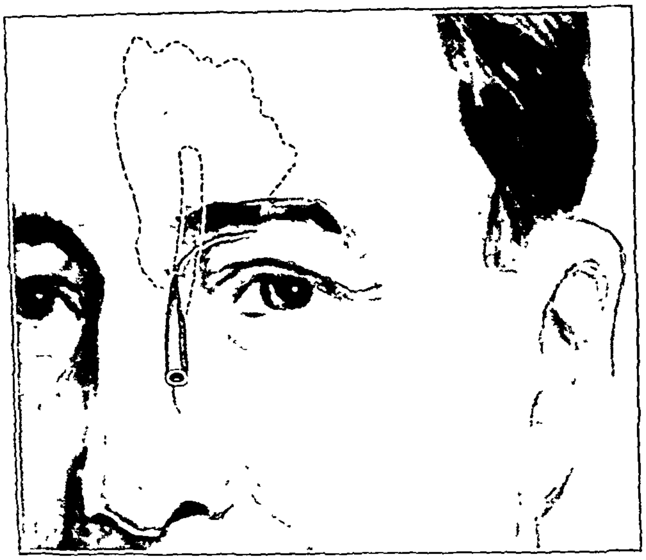

Fig. 2.—Rubber tubing in place for drainage of frontal sinus.

SPHENOIDAL SINUSITIS

In children, sphenoiditis will produce headache; and whenever headache is a symptom in children with sinusitis, thorough attention should be given to the sphenoid. The sphenoid sinus is present at birth as a cell developed anteriorly to the bone; but by the fourth year it is encapsulated by bone and by the tenth year has reached its full development, so that in children it may assume clinical importance. The roentgenogram is of valuable aid in diagnosing an empyema of this sinus in children under puberty, as their nares are so small that thorough inspection is not practicable. If the sphenoid is found to be suppurating in children, it can be punctured and irrigated with the long needle of the Dean antral irrigating set. The sphenoid can be entered by using the posterior attachment of the middle turbinate as a land mark, as it is just posterior to it. The ostium can be enlarged with a Sluder sphenoid knife. In the adult, the anterior wall of the sphenoid can be resected, and, if indicated, a catheter inserted for drainage.

ETHMOIDAL CELLS

An acute empyema of the ethmoidal cells is rare in children, though the ethmoids of children suffer frequent infections; but whenever an infection does advance to the stage of suppuration, it usually ruptures into the orbit and will require external drainage. On one occasion I saw a distinct empyema of the posterior ethmoidal cells in a girl, aged 10, and in this case a thorough incision above and posterior to the middle turbinate and under the small superior turbinate permitted drainage. On the other hand, in adults either the anterior or the posterior group of ethmoidal cells may suppurate and resist all attempts to drainage by suction or irrigation. Under these circumstances the

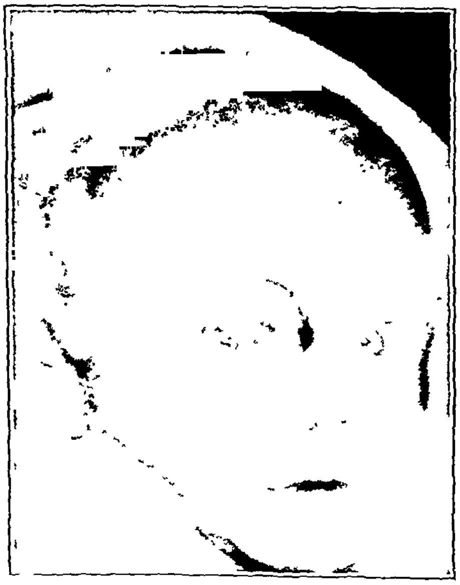

Fig. 3.—Rubber tubing drain in place for drainage of orbital abscess following rupture of an acute ethmoidal empyema.

offending cells should be punctured and drained either by suction or by irrigation. The middle turbinate should not be amputated in the face of such an acute infection for fear that its rich supply of lymphatics might carry the infection up into the cranium. The postoperative swelling of the nasal membranes must be prevented by continuous shrinkage, and when the abscess is situated in the posterior group a tube drainage will facilitate matters. In like manner a submucous resection of the nasal septum should not be undertaken until the infection has been quieted.

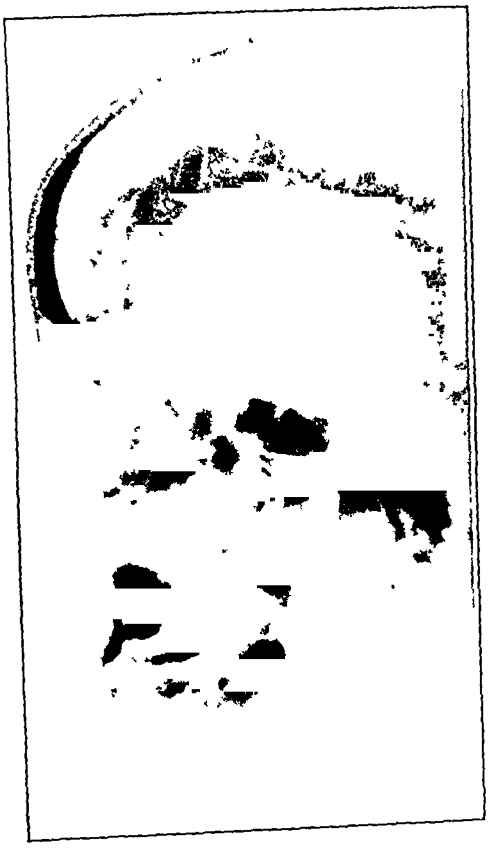

Fig. 4.—Condition in a boy, aged 12, before operation for an acute frontal sinusitis.

AFTER-TREATMENT

The reestablishment of drainage and ventilation being our aim, the channels should be kept open either by suction or by irrigation, with preference to the former. The protein silver compounds are of value, as they are the greatest solvents of pus at our disposal. Some cases improve with alkaline washes, while others do better with mildly acid solution. The dyes have their place, and if the tubes are used will allow of frequent instillation by the nurse without pain to the patient. Foreign protein therapy may be instituted and supportive treatment maintained.

CONCLUSIONS

1. The surgical treatment of acute suppurative paranasal sinusitis is emergency surgery.
2. External drainage of severe frontal infection is safer than risking inadequate internal drainage.
3. Rubber tubing as catheters are more efficient than gauze wicks.

185 Poplar Street.

ABSTRACT OF DISCUSSION

Dr. R. C. Lynch, New Orleans: The surgical treatment of acute paranasal sinus suppuration may be emergency in type, but must always be bold and backed by both courage and conviction. I am in hearty accord with the use of rubber tubes as against gauze for the maintenance of ventilation and drainage. Although these tubes are foreign bodies, their insult to the tissues seems the least of all the agents at our command. The technic of cavity content and confirmation and study, also the method of establishing and maintaining drainage are approved of heartily. Pus, unfortunately, does not entirely typify the pathologic process. If the infection is of a round cell infiltration type, limited to the soft tissues of the cavities under discussion, then ve d drain-
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age, as described by the author, is all he
bring about subsidence and arrest of th
infection is of the thrombophlebitic typ
and ventilation will not suffice to bring a process. Only early complete evisceration, with wide open wound, will stop bone involvement and general systemic invasion, and this only when the intervention is ahead of the pathologic process. Under these circumstances the establishment of convalescence becomes almost dramatic. Thrombophlebitis in any cavity is not a condition of its limitations, but of its vascular projections. If this conception is kept in mind, one's intervention can better be suited to the problems confronted. Each individual is a separate entity, and no rule can be laid down which will apply to all cases. Fortunately, anatomic construction is such that free vascular penetration of the bony sinus wall is meager, both the caliber and number of vessels being small. It is more than likely that this explains the relatively few instances in which rapid progress plus bone destruction and general systemic invasion are observed. It is under these circumstances that the freest ventilation and widest drainage must be maintained. The principles outlined apply to all the paranasal sinuses and in all ages.

Dr. Ross H. Skillern, Philadelphia: For some time past I have ceased to operate on acutely inflamed sinuses wherever possible. I say that advisedly—wherever possible—at least externally. Of course, many times we must remove the anterior end of the middle turbinate in order to establish drainage, but to operate externally on the sinuses, particularly the frontal and maxillary, is something that I am not called on to do—certainly not more than once or twice in my whole practice. In acute sinusitis we must do something to reduce the pressure. In a case of strongly deflected septum, with a sinusitis of virulent type, symptoms of pressure developed and it looked as though there were some cerebral complications. I was obliged to open the anterior wall, but only to the extent of relieving the congestion and the pressure. A few hours later the stormy symptoms had disappeared, the temperature

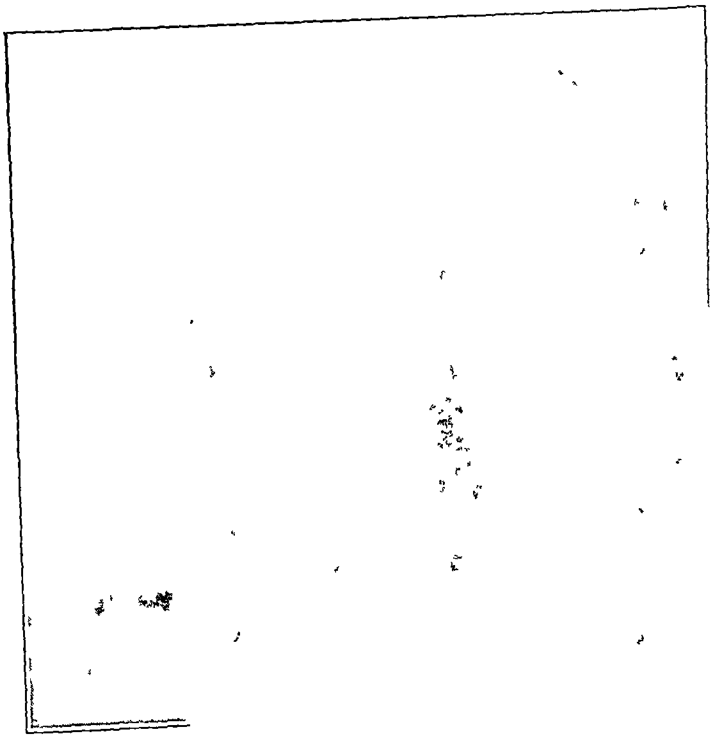

Fig.

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tissue reactions are fully adequate to handle the local situation in practically every case of this kind, more efficiently and more conservatively of local essential tissue and against general dissemination throughout the body. Only in extremely rare instances does the exceptional case occur, not more than one case in 10,000. There is no place for any surgery whatever in the treatment of the other 9,999 cases. The exception should be handled in accordance with its individual demands, not according to any predetermined surgical scheme. If we are content to go a bit slowly and adopt general systemic measures calculated to help in bringing about the natural outcome, we shall have a quicker and a more complete recovery together with the preservation intact of a practically normal nasal organ, the importance of which, to the patient, cannot be overestimated.

Dr. George E. Shambaugh, Chicago: My views are very much like those expressed by Dr. Lewis and Dr. Skillern. Dr. Shea makes a significant statement in the opening paragraph when he states that operative treatment for acute sinusitis in children is an emergency operation. I agree with that. I think he should have been more explicit about what constitutes indication for emergency. Certainly not every child with acute purulent sinusitis is in need of operative treatment. Acute involvement of the sinuses, varying in degrees of severity, is extremely common. The indication for operative treatment arises extremely seldom. This indication consists of the development of a complication, usually orbital. I have never seen a child in whom I recognized an indication for a sphenoid operation. The explanation by the author of why the headaches occur in sinus disease is interesting. I cannot see vacuum headaches myself. Suppose, for the sake of argument, that the closure of the nasofrontal duct occurs, and that there is rarefaction of air in the sinus; how long do you suppose it would be before the cavity would become filled with exudate? I am very skeptical about vacuum headaches, having seen the typical headache attributed to vacuum in a case in which the roentgenogram showed an absence of frontal sinuses. In conclusion, I would repeat that except in the very rare occurrence of complication from acute sinusitis, operative treatment in children is not indicated, and children with sinusitis would be better off if all these special instruments devised for operating on the sinuses were junked.

Dr. F. J. Pratt, Minneapolis: I should like to ask Dr. Shea what he means by "acute." After a certain length of time we establish an immunity to our first infection, and after that immunity is established then, of course, it is safe to do surgery. So I wonder how long a time he considers it an acute infection.

Dr. John J. Shea, Memphis, Tenn.: This paper presumes that routine medical and local procedures have failed to arrest the condition, or that the disease has advanced to such a degree as to indicate immediate surgical intervention. The paranasal sinuses have an indulgence to cope with infections without serious symptoms and to return to their normal state if ventilation can be established. Hence, the proper basis of treatment of acute suppuration of the paranasal sinuses is the reestablishment of ventilation and drainage. Dr. Skillern brought out a good point. The reason we do not have osteomyelitis of the frontal bone is that we do not attack the anterior wall of the frontal bone; we attack the floor. The indications for operative intervention in an acute frontal sinusitis are threatened intracranial complications or orbital swelling, indicative of rupture of the frontal into the orbit. Dr. Shambaugh says he has never seen any indications for doing anything to a child's sinus. The child whose picture I showed, with an acute orbital abscess, the eye being closed, certainly needed some relief. One cannot give him adequate relief by internal drainage, so one must use external drainage. The whole idea of the paper was to make a plea not to do anything to any of these sinuses unless the condition was such as to make it absolutely necessary, and when it is necessary simply to establish ventilation and drainage; this drainage can best be accomplished by using a rubber tube instead of wick drainage. We all know that after immunity is established we can surgically interfere with the sinuses.

Clinical Notes, Suggestions, and New Instruments

THE BENEFICENT EFFECT OF HEART BLOCK IN CERTAIN CASES OF CARDIAC DISEASE: ADDITIONAL REPORT

Louis Faugeres Bishop, M.D., New York

In 1922 I[1] published an account of an old man who had survived fibrillation of the auricle for a number of years without digitalis. This happened on account of the presence of heart block. With this report I published two electrocardiograms taken after an interval of three years. Much to my surprise, the patient came to my office recently and reported that he had gone on very much the same, and now at the age of 77 is still able to attend to his business as president of a savings bank. His heart action at the present time is shown by the accompanying electrocardiogram, which is almost precisely like the one taken in 1919.

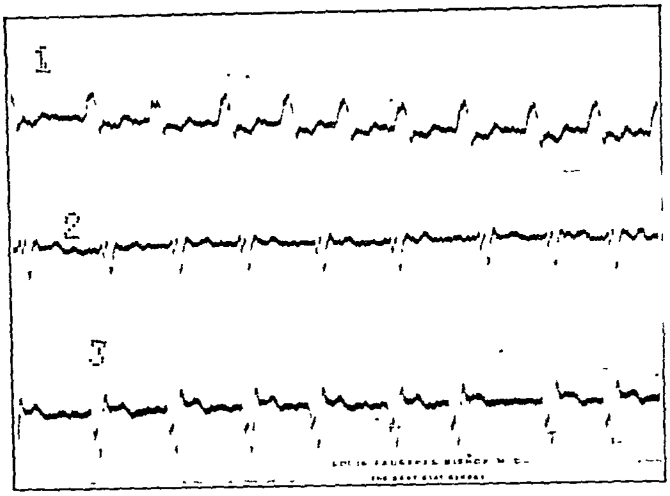

Fig. 1.—Fibrillation of the auricle compensated by heart block, Jan. 25, 1926, resembling electrocardiogram taken in April, 1919 (The Journal, May 20, 1922, pp. 1535 and 1536).

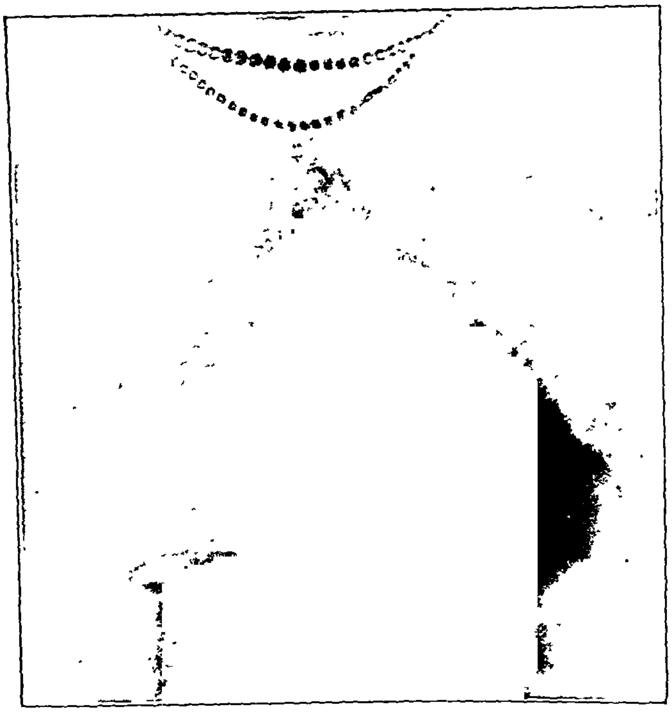

Fig. 2.—Great hypertrophy of heart in September (second case), 1919.

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[1] Bishop, L. F: Heart Block as a Favorable Influence in the Progress of Chronic Fibrillation, J. A. M. A. 78: 1535 (May 20) 1922.

By a strange coincidence, the same morning a woman, aged 46, was seen who illustrates in another type of person the beneficence of heart block in fibrillation. This patient is an example of mitral stenosis with fibrillation and an enormous hypertrophy. I have, in all, twelve electrocardiograms taken about every six months over a period of six years.

The accompanying illustrations show a rather remarkable course in spite of the onerous domestic duties of a large household and several children. When she came in the other day, she had not taken digitalis for nearly six months, although it had been my custom to give it to her part of the time in the belief that it has a strengthening effect on the heart irrespective of its definite physiologic effect. This type of cardiac disorder is called by some cardiologists the "slow fibrillator."

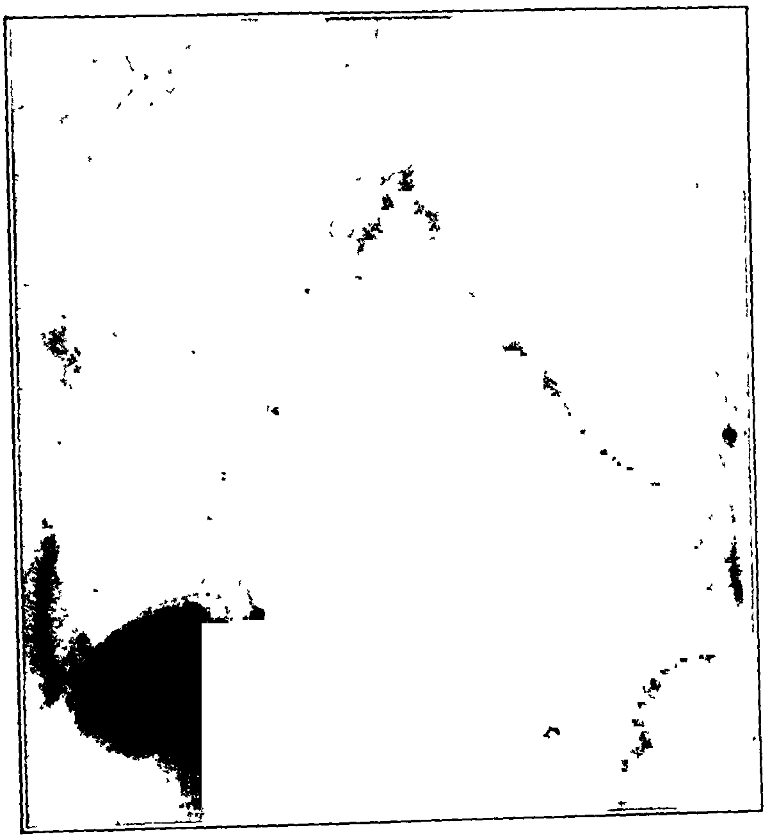

Fig. 3.—Same heart as in figure 2, 1925.

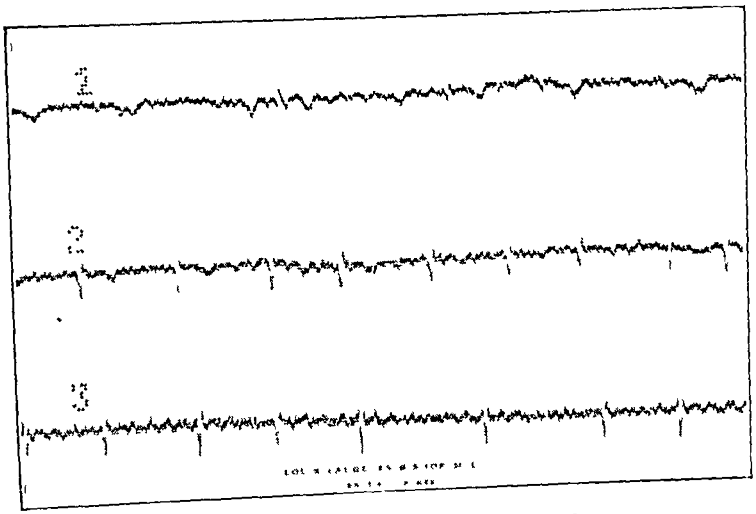

Fig. 4.—Condition in September, 1919.

It runs remarkably true to form, and nearly all of them show an enormous hypertrophy and fibrillation with very long pauses, as shown in the accompanying records of this young woman.

Our aim in the treatment of patients with fibrillation is to reduce the extremely rapid ventricular action due to the great number of abnormal auricular impulses to a certain optimum level which will enable the heart muscle to do its work. Undoubtedly, the beneficent effect of digitalis in these instances is due to its blocking many of these impulses from the auricle, as well as its direct effect in increasing the tone of the cardiac musculature.

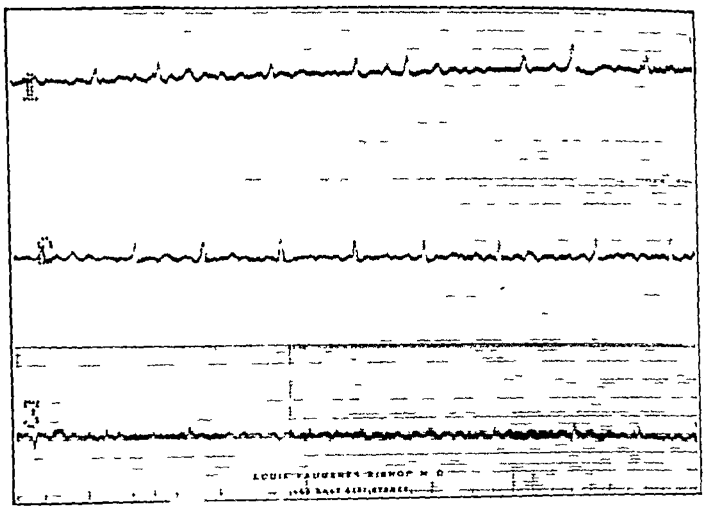

Fig. 5.—Condition in 1925.

These two examples reported seem to show the same beneficial effect of heart block in these patients, simulating the result of the use of digitalis.

109 East Sixty-First Street.

HEMORRHAGE IN A CASE OF VON RECKLINGHAUSEN'S DISEASE

George L. Carrington, M.D., Durham, N. C., and James B. Bullitt, M.D., Chapel Hill, N. C.

In this case there was an extensive hemorrhage into one of the tumors of a patient having von Recklinghausen's disease. While such an occurrence is always a possibility in large growths of this type, so far as we can find there is no record of the event actually having taken place.

REPORT OF CASE

B. T. F., a negro man, aged 22, single, a laborer, complained of a swelling in the side that began suddenly and in the space of two hours had become as large as his head. Since childhood he had had numerous small nodules over his body. One on the abdomen measured 2 inches by 1 inch (5 by 2.5 cm). The largest, which was about the size of an orange, was located on the right flank. The morning of July 28, 1925, he was struck over the right flank by a falling tree. He continued work until noon, and then quit because of pain in the back and flank. The following day he was able to go back to work, however, and worked all day. That night he felt well, ate a hearty supper, and then lay down. About an hour after lying down, without having had any pain or having undergone any exertion, he noticed that his side was swelling. About three hours later, when he was seen by one of us, there was a mass over the right side and the kidney region, extending from the lower costal margin to the crest of the ilium, and from the erector spinae muscles forward to a line midway of Poupart's ligament. The mass was soft, fluctuant and superficial. The skin over it was distended, smooth and glistening. The patient's general condition was good. There were no signs of shock. The pulse was 88 and the systolic blood pressure 150; diastolic, 85. Urine examination revealed no albumin, sugar or casts, but a few red blood cells. The patient was kept under observation for several days, and his general condition remained excellent. The skin over the mass, however, began to thin out and to show indications of breaking down. The heart and lungs were normal. There were a few small nodules over the body and extremities. All were superficial. The skin was naturally very dark, and no abnormal pigmentation could be made out. There was an eczema of both hands, most marked on the palmar surfaces. The cerebration was distinctly slow. The Wassermann reaction was negative. A satisfactory family history was not obtainable.

Operation by one of us (G. L. C.) was done Aug. 3, 1925. Under ether anesthesia, a long curved incision was made from the twelfth rib down and forward over the crest of the ilium. A mass of partially clotted old blood was removed. The posterior abdominal wall was intact. There was no communication with the kidney. After the blood had been evacuated, the walls of the cavity were found covered with a slimy, partially organized layer of blood clot. This was curetted off, the cavity was washed out with boric acid solution, and all bleeding vessels were ligated. No large bleeding vessels were found. An elliptic piece of skin and superficial fat were excised, so as to allow a smooth closure of skin and adjacent tissues that would have a good blood supply. The cavity was obliterated by plain catgut sutures and the incision closed about two cigaret drains with interrupted silkworm-gut sutures. Any identification of tumor tissue from adjacent tissue was impossible on account of the distortion due to hemorrhage into the superficial tissues. The tumor on the abdomen was removed at the same time for histologic examination.

After operation, the course was uneventful. The wound healed by first intention, though there remained a feeling of puffiness to the underlying tissues on each side of the incision. The patient was discharged two weeks after operation; but after being told that he could go home, he waited a day and then slipped out of the hospital without the knowledge of the nurses.

The tumor from the abdomen consisted of an ovoid mass of dense fibrous tissue (4 by 3.5 by 2.5 cm.), covered by a much wrinkled black skin.

Microscopic examination of the surface showed a normal, deeply pigmented skin. Underlying the skin was a mass of close meshed fibrous tissue, richly supplied with connective tissue cells. The boundaries of this mass were fairly sharp, but there was no capsule. The fibers of the tumor blended on the one side with those of the dermis and on the other with those of the subcutaneous areolar tissue. All the cells were well differentiated. There were no mitoses or other evidences of a malignant condition. A few sebaceous glands and some dilated sweat glands were found within the tumor. Nothing resembling nerve cells or nerve fibers was seen. The diagnosis was fibroma (von Recklinghausen).

The cause of the hemorrhage thirty-six hours after trauma will, of course, remain uncertain. It is possible that the occurrence was spontaneous and that the trauma had nothing to do with the event. There is no record that we can find of such a thing having occurred before, however, and we think that the more probable explanation is that a vessel within the tumor was contused and its wall incompletely ruptured by the falling tree, and that later pressure within the vessel ruptured through the weakened wall. Such a thing—the occurrence of delayed hemorrhage after trauma—we have seen following renal and cerebral injuries. The usual explanation given is that the wall of some vessel in the area of trauma is contused and partially torn through. Later, the pressure within the vessel gradually distends the weakened portion of the vessel wall until it ruptures, with the resultant hemorrhage. Such, we think, was the probable course of events in the case here reported.

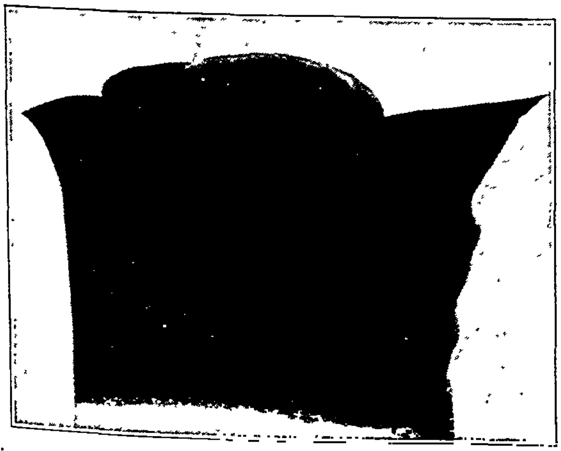

Fig. 1.—Profile view of tumor and adjacent area after hemorrhage had occurred. Before the accident the tumor was stated to have been no larger than a medium sized orange.

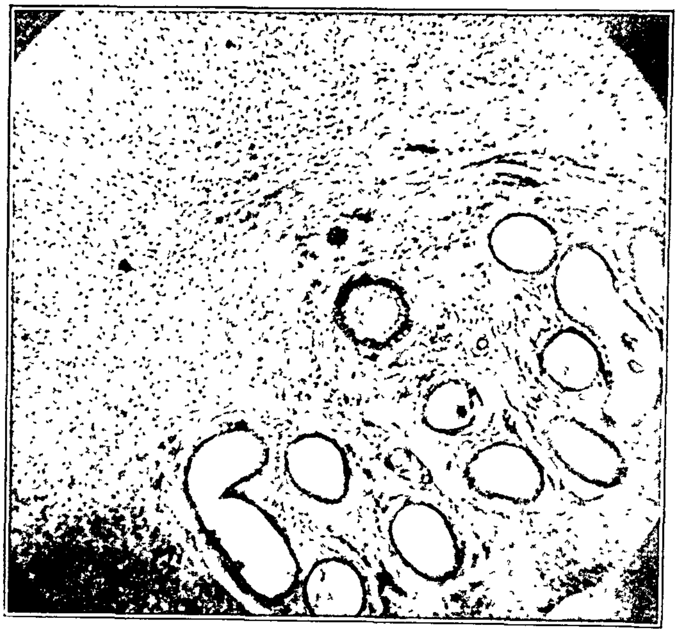

Fig. 2.—Tumor cells and sweat glands in portion of tumor removed from abdominal wall.

GIANT-CELL SARCOMA APPARENTLY ARISING FROM THE APONEUROSIS OF THE FOREARM

Frederick Christopher, M.D., Winnetka, Ill.
Junior Surgeon, Evanston Hospital; Associate in Surgery, University of Illinois College of Medicine.

Giant-cell sarcomas of tendon sheaths of the hands and feet have been known for fifty years. They were especially observed by French writers, who termed them "myeloma" or "xanthosarcoma." They also may arise from the aponeurosis. Spiess,[1] who reviewed the subject in 1913, believes they should be called "hemosiderin-producing giant-cell xanthosarcomas."

These tumors are benign and never metastasize. After a thorough removal, recurrence is a rarity. They may take as long as twenty years to develop to the size of a nut or egg. They are not painful, and the majority occur between the ages of 20 and 40.

As these tumors generally arise from the tendon sheaths and aponeurosis of the hand, the following case, in which the tumor apparently arose from the aponeurosis of investment of the forearm, is deemed of sufficient interest to report:

Mrs. E., aged 34, two years previously had a severe fall, striking her forearm against a stair landing. For about a year, she had suffered from what she described as the "going to sleep" of the right forearm and hand. This sensation was most marked in the little and ring fingers. For the last nine months, there had actually been some pain in this forearm. Examination showed a firm nodule on the ulnar aspect of the right forearm. This nodule seemed to be from about one-half to three-fourths inch (13 to 19 mm.) in diameter and situated just on the muscle. It was not tender. The overlying skin was freely movable. The tumor was removed under local anesthesia. It seemed grossly to be encapsulated and in intimate association with the aponeurosis which envelops the muscles of the forearm. The wound healed satisfactorily, and since then the patient has been relieved of the pain and the sensations of going to sleep.

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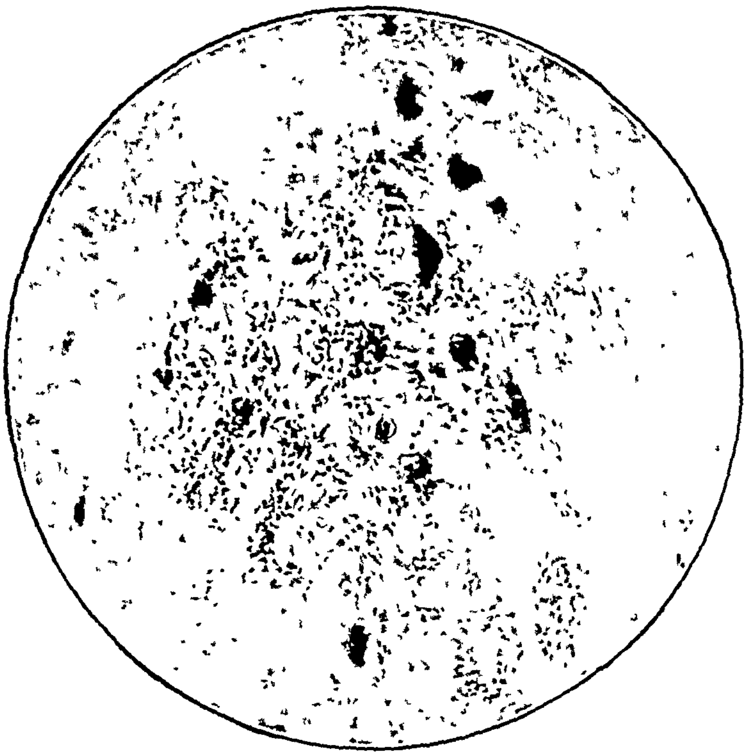
[1] Spiess: Frankfurt Ztschr. f. Path. 13: 1, 1913.

The pathologic report, by Dr. J. L. Williams, described the tumor as an oval encapsulated mass of tissue, 1.6 by 0.8 cm., consisting of firm white tissue. Microscopic examination showed the tissue surrounded by a dense fibrous tissue capsule; it consisted largely of fibrous tissue with many multinuclear giant cells. In some places, the tissue had grown through the capsule into the adipose tissue adjacent, but even there the tumor did not appear malignant. In places, especially around the capsule, there was a considerable amount of round-cell infiltration, and in some places there were leukocytes, and there the fibrous tissue was also edematous. The diagnosis was giant-cell sarcoma.



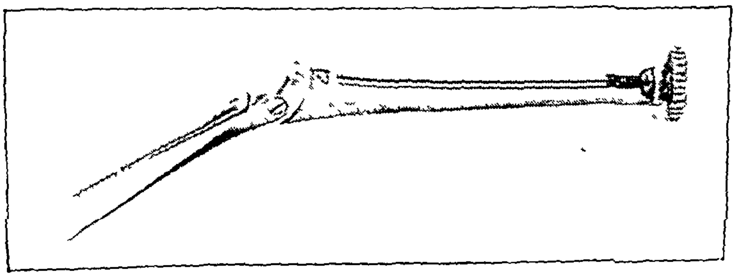
Giant cell sarcoma arising from aponeurosis, showing giant cells and small round cell infiltration.

545 Lincoln Avenue.

A NEW CLAMP FOR VAGINAL HYSTERECTOMY.

R. G. Hendricks, M D., Indianapolis.

This clamp is designed to meet the following requirements: (1) safety; (2) ease of application; (3) minimum of weight and bulk, and (4) ease of removal. Ordinary hemostatic forceps are readily applied but have the added danger of letting loose at the clasp and must therefore be tied or otherwise secured during the time they are left in postion. From four to six handles protruding from the vagina are heavy, bulky and difficult to loosen and open up without pain to the patient. The advantages of the new forceps lie in the principle of the screw, which permits any given amount of pressure to be applied to the jaws, and it is proof against slipping or otherwise letting loose after it has once been placed in position. The blades are 2 inches in length and so angulated as to facilitate application to the broad ligament. It also leaves this structure in approximately the normal position after the uterus has been excised. Aside from the element of safety of the screw over any lock device is the ease with which it may be removed. The nurled nuts are easily accessible and may be turned with so little trauma that the patient scarcely feels this heretofore dreaded postoperative procedure. A few turns partially open the blades, the forceps fall out, and the operation is completed.



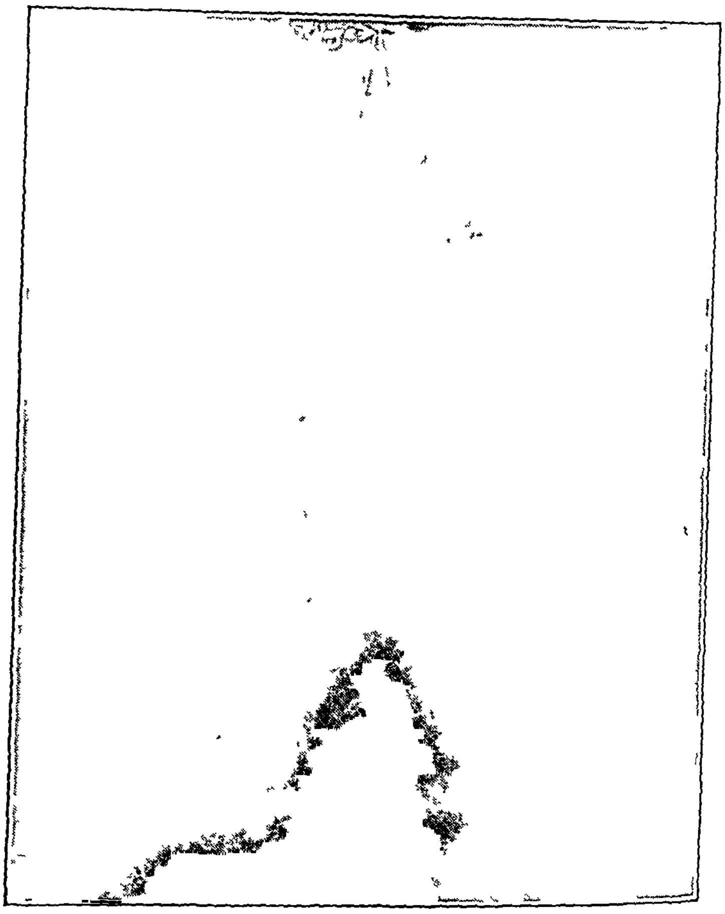
Clamp for vaginal hysterectomy.

Medical Arts Building.

RAZOR HANDLE IN BRONCHUS*

G. Edward Campbell, M.D., Johnson City, Tenn.

A man reported to his ward surgeon that on the previous day, during a fit of depression, he had swallowed the handle of a safety razor, but did not say anything about it at the time. Roentgen-ray examination verified the patient's statement. Exploration of the esophagus failed to disclose the presence of the body or any evidence of perforation. Examination with a bronchoscope also failed. On the third day, the foreign body was coughed up spontaneously. No serious changes were produced in the lung, nor was there any interference with breathing. There were some signs of edema at the left base the day following the exploration and up to the time the foreign body was expelled. These signs had disappeared entirely within five days after exploration.



Location of razor handle.

The most interesting question in connection with the case is the mechanism by which it was introduced, and how a foreign body of such dimensions could have been forced through the larynx and past the vocal cords to become lodged in the left main bronchus without causing severe suffocation and uncontrollable spasmodic coughing.

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* From the Service National Military Hospital

Freudian Psychology.—The freudian doctrines are fundamentally derived from the supposition that all "wishes" and "desires" . . . of any importance are dependent on exercise of the sexual instincts, and that the energy of the whole mental and nervous system is like a fluid which can b dammed up and drained, now in one direction, now in another I know of no adequate psychological or neurological evidence in support of this view.—Myers, C. S.: *Lancet*, June 19, 1926

FRACTURE OF RIBS COMPLICATED BY ILEUS

D. T. VANDEL, M.D., KANSAS CITY, MO.

Fracture of the ribs is a common surgical condition, but rib fracture followed by ileus is a rarity worthy of note.

J. B., a man, aged 43, admitted to the hospital, Oct. 22, 1925, had been in an automobile accident. Roentgen-ray examination showed a fracture of the twelfth rib in the right scapular line, and the eighth and ninth ribs 1 inch to the right of the vertebral margin. The right thorax was strapped with adhesive tape, and the patient was put to bed and made as comfortable as possible.

Next day, severe lancinating pain in the epigastrium and right hypochondrium was relieved for about two hours by morphine. Later in the afternoon, he vomited moderate quantities of bile-stained fluid; enemas were without result. By this time, abdominal distention was marked, the pain was increasing in severity, and the patient became delirious.

It was thought that a mesenteric thrombosis, traumatic perforation of the gastro-intestinal tract, or rupture of the diaphragm might be the cause for the increasing severity of the patient's condition. Blood counts and urinalysis were within normal limits. Chemical examination of the blood showed, to each hundred cubic centimeters, chlorides, 500 mg.; nonprotein nitrogen, 41.40; urea nitrogen, 16.81; creatinine, 1.7; blood sugar, 130.

October 24, an exploratory laparotomy was performed. A small amount of clear, yellow fluid was found between the coils of intestines. The distal three feet of the ileum was distended with gas to such an extent that the walls appeared like thin paper. The duodenojejunal portion was collapsed, with thick, cyanotic walls. Complete inspection of the gastro-intestinal tract failed to show any perforation or evidence of mesenteric thrombosis. Jejunostomy was performed and the abdomen closed.

A stormy postoperative course followed. There was more distention, with vomiting and marked delirium. Two blood transfusions of 500 cc. each were given, relieving to a fair degree the delirium. October 26, a small amount of bile-stained fluid, accompanied by gas, came through the jejunostomy tube. This condition prevailed until November 2, when feces and gas were passed through the rectum and intestinal contents drained from the jejunostomy, and the patient became progressively better. He left the hospital in good condition, December 5. When seen four months later, he was enjoying good health.

COMMENT

A careful perusal of the literature has shown only two references to a like condition following rib fracture. Adams[1] reporting two cases, and Ralphs[2] reporting one case. In both cases reported by Adams, the fracture was close to the angle of the ribs, and hence close to the sympathetic chain. From such relationship, he suggests that displacement of the proximal fragments might be great enough to irritate the sympathetic chain and its gangliated cords, which innervate the intestinal tract. This explanation is plausible, for Starling[3] has shown that stimulation of the splachnics is followed by relaxation of the ileum.

In Adams' case and the one here reported, the fracture occurred near the sympathetic chain, and it is possible that such traumatic stimulation may give rise to ileus. However, in Ralphs' case, the fracture occurred near the angle of the rib; nevertheless, the ileus occurred. Anatomically, it is hard to understand how the proximal rib fragment, which is strongly bound to the vertebral column by ligaments, could move to the extent necessary for this explanation to apply.

In all these cases, the mental condition of the patient has been abnormal and it may be that a traumatic fat embolism may be the basis for the abdominal conditions found in such cases. It is interesting to note that the chemical condition of the blood, with regard to the nitrogen and chloride contents, is not materially affected.

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[1] Adams, J. E.: Paralytic Ileus as a Sequel of Fractured Ribs, Ann. Surg. **51**: 102, 1910.

[2] Ralphs, F. G.: Ileus Following Fractured Ribs, Brit. J. Surg. **13**: 559 (Jan.) 1926.

[3] Starling: Recent Advances in Physiology of Digestion, 1905.

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

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(Continued from page 99)

NEEDLE ADMINISTRATION

IN GENERAL

In view of the frequent employment at present of injection of medicaments into various parts beneath the surface by means of a syringe with a sharp hollow needle, it may be surprising to realize how recent this method is. It began with hypodermic administration, introduced in 1853 by A. W. Wood of Edinburgh, the syringe used in these injections having previously been invented by Pravaz for surgical purposes.

The Pravaz syringe consisted of a glass cylinder with a leather or asbestos piston. As this is liable to get out of order on account of leakage at the packing of the piston, it has been superseded by syringes with pistons that need no packing. The metal syringe, though unbreakable, has the disadvantage of invisibility of its contents. Hence the modern syringe is a glass cylinder with a ground glass piston (the Luer syringe) or a glass cylinder with a metal piston (the record syringe) the former being the most popular in this country. Either the barrel or the piston must be provided with graduations. To meet the varying requirements of different kinds of injection, quite a variety of syringes and needles is on the market. The single most important of these is the hypodermic syringe of 2 cc. capacity. It is small enough to be readily carried in a pocket case and large enough for most hypodermic and many other injections. A 1 inch no. 23 gage needle is perhaps the single best needle for most purposes. At least two needles should always be carried, preferably rust-proof. A needle should be discarded or sharpened as soon as it is the least bit dull. Careless handling, such as dropping the needle or striking with its tip any hard object, may ruin the point of even a new needle. Patients who have hypodermic injections frequently soon learn to appreciate the difference between a sharp and a dull needle. The needle should always be wired; otherwise it is liable to become stopped up by dirt. First water and then alcohol should be passed through the needle before the wire is put in.

In these days of self-administration of injections by patients, as of insulin in diabetes or of epinephrine in asthma, means are required of carrying a hypodermic syringe sterile and always ready for use. That such equipment is also desirable for the physician's emergency outfit should go without saying; but nearly all physicians—most conservative as they are—still bother with sterilizing syringe and needle just before use. A vial of proper size, fitted with a rubber stopper that has a hole cut into it to permit the hypodermic syringe to pass through, answers the requirements.[72] An unbreakable metal cylindric container with pocket clip attachment, so that it can be carried like a fountain pen, is still better. Though these are on the market, the fact that dealers in general do not carry them points to insufficient appreciation of their utility. The container is kept filled with alcohol denatured by phenol, a little of which may be conveniently used for sterilizing the skin prior to injection.

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* This is the twenty-ninth of a series of articles on "The Technic of Medication." When completed, the articles will be assembled in book form.

[72] Grenshaw, Hansell: An Improved Hypodermic Outfit, J. A. M. A. **57**: 2121 (Dec. 30) 1911.

A rust proof needle is required if it is to be left attached to the syringe immersed in the alcohol; of this kind the iridoplatinum needle is best, as it is practically indestructible.

When the injection of small quantities of accurately measured fluid is required, the so-called tuberculin syringe of a capacity of 1 cc. and graduated into 0.05 cc. is indispensable. A dark glass piston is of advantage, as it makes accurate reading of quantities easier. This syringe is useful for the administration not only of tuberculin but also of other antigens, such as pollen toxin and bacterial vaccines, and for the preparation of dilutions of these.

When large quantities of fluid have to be given, syringes of larger capacity are convenient, though in an emergency a 2 cc. syringe may be employed for this purpose by leaving the needle in place and filling the syringe again and again. While an assortment of 5, 10 and 20 cc. syringes is of advantage, the 10 cc. syringe is the one that will meet most requirements of administering antitoxic serums, neo-arsphenamine solution, etc., though the fact that manufacturers are putting up antitoxic serums in syringe containers renders the carrying of such a syringe in the physician's emergency bag relatively unnecessary.

When still larger quantities are required—a form of injection commonly spoken of as infusion—the gravity method is perhaps the simplest, as far as apparatus is concerned, consisting, as it does, of an irrigator or merely a funnel or the barrel of a large size glass syringe, a hollow needle and a 3 or 4 foot piece of rubber tubing of such diameter as to connect the former with the latter. A glass connecting piece may be required to mediate the connection between the two diameters of rubber tubing needed to fit the funnel to the needle.

Asepsis of the apparatus should be secured, whenever possible, by boiling for at least fifteen minutes. It is obviously best, however, to keep the syringe and the needle always sterile, which can readily be done by the means suggested above. While ampules give us the most convenient means of securing sterile solutions for injection, they are rather bulky for carrying in an emergency equipment, they are relatively expensive, and some of the more delicate organic principles are liable to deteriorate even when kept in sterile solution. Hence physicians generally prefer hypodermic tablets for the preparation of injection solutions, whenever the nature of the remedy permits its manufacture in this form. These tablets are put up in a sterile manner by the manufacturer, and the physician should keep them so. The preparation from these of a sterile solution in the ordinary household is commonly carried on in the following manner: Into a small vessel or metal cup a teaspoon is placed and covered with water, which is then boiled. The spoon is removed from the water and a tablet is carefully shaken out of the vial into the sterile empty spoon. The syringe—needle detached—is then filled with the sterile water. The syringeful of hot water is then squirted into the spoon, and the tip of the syringe employed to break up the tablet and stir to expedite solution. The liquid is then drawn into the syringe and the needle attached. The air in the syringe and needle is then expelled by holding the syringe vertically—needle up—and pushing up on the piston until the first droplet escapes from the needle tip. It is now ready for injection.

Skin sterilization is best carried out by means of tincture of iodine. Marshall[73] describes an iodine swab and container for it that fits nicely in the case alongside the syringe. That there is real danger from insufficient asepsis in needle administration is shown by the fatal case of gas bacillus infection reported by Tennant[74] and the cases of tetanus reported by Doane.[75] Ordinarily alcohol is employed, and preferably for venipuncture, as the discoloration produced by iodine may hide somewhat the outline of the vein.

Pain is one of the disadvantages of the needle method. But the pain produced by the needle is trifling if it is bright and sharp, and driven in and withdrawn by a swift and steady hand. One should never inject in a part where the tissue is dense and unyielding, as the distention produced by the fluid is painful. If the solution is nonirritating and deposited in loose tissue, it will generally not produce any pain. Irritating injections, however, may be very painful, and even lead to destruction of tissue; hence the importance of a suitable preparation of the solution. If an irritating injection cannot be avoided, it should be given deep—intramuscularly—which makes the injection less painful, as there are fewer sensory nerves in muscles, and there is more rapid absorption as well as lessened liability to the production of an abscess on account of the better blood supply; or, better still, the injection is given intravenously, as the blood current immediately dilutes and renders the solution much less irritating.

To minimize the pain of the injection, parts are chosen, whenever possible, that are poorly supplied with sensory nerves, as the outer side of the thigh or of the arm. The skin is pinched into a fold, the pressure lessening the sensitiveness of the surface, and the needle is inserted so as to pass vertically through the skin, which is less painful than if it passes through more obliquely. For sensitive patients, the pain of the needle puncture may be further lessened by the momentary application of the ethyl chloride spray.

After the injection the needle is swiftly withdrawn, the skin being pressed down with fingers of the other hand, to keep it from being pulled along with the needle. A sterile cotton applicator or piece of gauze is then firmly applied to the puncture to favor its sealing and lessen leakage.

To keep the syringe and needle in working order, it is important to wash them thoroughly with the sterile water (reserved for the purpose in the small vessel or cup) by filling and emptying them repeatedly. Finally alcohol is passed through them and the needle is wired. Should the piston of the syringe become adherent to the barrel, as ground glass surfaces sometimes will, the method described by Christobal Manalang[76] usually succeeds in loosening them. The syringe is placed on ice for about ten minutes, and the barrel then rapidly warmed over a small flame or in water at from 40 to 50 C. The barrel, being the part first warmed, will expand first, leaving the cold plunger behind, thus breaking the adhesion. A continuous pull on the handle of the piston before it becomes warmed and expands will invariably separate it from the barrel. To be successful, therefore, the warming of the barrel and the traction on the piston must be accomplished in a few seconds.

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[73] Marshall, C. J.: *Iodine Swab for Sterilizing Site of Hypodermic Puncture*, J. A. M. A. **76**: 1100 (April 9) 1921.

[74] Tennant, C. E.: *Skin Preparation in Hypodermic Needle Punctures*, J. A. M. A. **80**: 1066 (April 14) 1923.

[75] Doane, J. C.: *Tetanus as a Complication of Drug Inebriety*, J. A. M. A. **82**: 1105 (April 5) 1924.

[76] Manalang, Christobal: *Method for Removing Adherent Syringe Pistons*, J. A. M. A. **78**: 994 (April 1) 1922.

Hypodermic Tablets.—For the preparation of solutions for injections, hypodermic tablets, generally prepared with dried neutral sodium sulphate as a diluent, furnish a convenient means. The following are those most commonly used; and these might be considered as a more or less indispensable part of the emergency outfit for the practicing physician which might be carried in a convenient pocket case. If only six tubes are to be carried, the following selection might be suggested:

1. Morphine sulphate	0.015 Gm.
2. Atropine sulphate	0.001 Gm.
3. Epinephrine hydrochloride	0.001 Gm.
4. Apomorphine hydrochloride	0.006 Gm.
5. Strophanthin	0.0005 Gm.
6. Glyceryl trinitrate	0.0012 Gm.

If twelve tubes can be carried, the following additions will be of advantage:

7. Scopolamine hydrobromide	0.0006 Gm.
8. Cocaine hydrochloride	0.010 Gm.
9. Pilocarpine hydrochloride	0.006 Gm.
10. Strychnine sulphate	0.002 Gm.
11. Physostigmine salicylate	0.001 Gm.
12. Procaine hydrochloride	0.030 Gm.

It will be noted that tablets containing rather large doses are recommended, as it is easy to obtain a smaller dose by dissolving a tablet and injecting as much of the solution as will represent the desired dose. Combination tablets, on the market in large variety, are not desirable; they occupy valuable space; and, if a combination is wanted, it can as readily be obtained by using as many different tablets as are required in the combination.

When it is not desirable or convenient to administer a hypodermic injection, these tablets may be given by mouth; or, in emergency, by perlingual administration.

Ampules.—Ampules are hermetically sealed containers, generally of glass, which are filled with a medicinal liquid in a sterile condition. They are of importance, most especially in connection with emergency remedies that cannot well be put up in the form of tablets. Ergot, for example, hypodermic tablets of the active principles of which have not been found satisfactory owing to their hygroscopic properties, is best carried for injection purpose in the form of ampules. In addition, it might be well to carry ampules of:

Solution of pituitary, U. S. P., 1 cc.
Solution of epinephrine hydrochloride (preferable to tablet form), 1 cc.
Caffeine sodiobenzoate (N. F.), 0.5 Gm.
Quinine and urea hydrochloride (N. F.), 0.5 Gm.
Camphorated oil (N. F.), 0.2 Gm.

Glass pearls of amyl nitrite and of aromatic spirit of ammonia, for administration by inhalation, might with advantage be added to this emergency equipment.

So well established has the use of ampules become that the National Formulary contains directions for their preparation, and formulas for ampules of emetine hydrochloride (0.03 Gm.), ampules of quinine dihydrochloride (9.5 Gm.), and ampules of sodium cacodylate (0.3 Gm.), in addition to the emergency remedies (designated N. F.) enumerated in the list above. Manufacturers prepare and list a great many more.

For use, the neck of the ampule, previously dipped in alcohol, is scratched on one side with a little steel file, also previously disinfected with alcohol. The neck of the ampule is snapped off by sharply bending it away from the nicked place. The sterile needle attached to the syringe is then inserted into the ampule, held between the index and middle fingers, while the thumb and the other fingers support the barrel of the syringe. The other hand, by pulling on the piston, withdraws the solution from the ampule, which is completely inverted—opened neck down—so as to bring the solution to the last drop within reach of the tip of the needle.

Vaccine Vials.—Vaccine and other antigens are most conveniently supplied in a sterile form to physicians in 5 or 10 cc. vials with a rubber stopper having a thin rubber diaphragm. To withdraw the amount required for injection, a drop of liquified phenol or other strong disinfectant is applied to the thin part of the stopper. The piston is partly withdrawn from the syringe, and its attached needle is plunged through the rubber stopper. The piston is then pushed forward, forcing the air from the syringe into the vial. Now the desired quantity of fluid can be easily withdrawn by holding the inverted vial so that the liquid covers the point of the needle.

Such vials filled with 5 cc. of sterile water or of physiologic sodium chloride solution are a great convenience for the extemporaneous preparation by the physician of antigen dilutions, some of which cannot very well be kept on hand, because of deterioration. Thus, tuberculin, which diluted 1 in 10 keeps well, may readily be changed into its third decimal dilution by adding 0.05 cc. of the first decimal dilution—a quantity easily measured by means of a tuberculin syringe—to 5 cc. of diluent. This is the dilution generally employed in the tuberculin test (1 cc. = 1 mg.). For initial treatment, the fifth decimal dilution is prepared in the same way from the third decimal dilution. Should the fourth decimal dilution be desired, 0.5 cc. of the diluent is withdrawn from the vial, and 0.5 cc. of the third decimal dilution is injected into it. Pollen toxin dilutions may be prepared in a similar manner from concentrated solution not only more economically but also more efficiently than by the use of "treatment sets" with dosage predetermined by the manufacturer. For reasons previously given, no one series of dilutions can possibly suit all patients with their various susceptibilities. Furthermore, dilute solutions of pollen toxin do not keep nearly as well as concentrated solutions. Dilutions 1 to 8, as suggested by Füld, may readily be prepared in a similar manner.[77]

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[77] Fantus, Bernard: The Technic of Medication, J. A. M. A. **86**: 1285 (April 24) 1926.

(To be continued)

Suggestion Does Not Explain Clinical Picture.—To regard suggestion as a completely satisfying explanation of the clinical picture presented by an individual patient would be as futile as to regard the electric current proceeding from a water driven dynamo as completely explained by the law of gravity. It is owing to this superficial character of the conception they employ that the later history of the suggestionist schools has been comparatively sterile. They have developed some useful practical methods, but in the understanding of patients and their illnesses they have progressed but little beyond the standpoint of the early hypnotists, or, indeed, of the early magnetizers. For this understanding we must turn to schools whose conceptions are more detailed and precise than that of suggestion.—Hart, Bernard: *Lancet* **1**:591 (March 20) 1926.

New and Nonofficial Remedies

THE PRESENT STATUS OF BACILLUS ACIDOPHILUS AND BACILLUS BULGARICUS THERAPY

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.
W. A. Puckner, Secretary.

In consideration of favorable reports, the Council in 1922 adopted the following statement for inclusion in the general article "Lactic Acid-Producing Organisms and Preparations" that was to appear in New and Nonofficial Remedies, 1923: "During recent years reports have been published which indicate that the growth in the intestinal canal of the normally present *Bacillus acidophilus* may be increased so as to make it the predominating organism by the administration of lactose (sugar of milk), by milk inoculated with *Bacillus acidophilus* or by the administration of viable cultures of *Bacillus acidophilus* in conjunction with lactose."

During 1923 the New and Nonofficial Remedies article on Lactic Acid Organisms and Preparations was submitted to a thorough revision by the Council's Committee on Lactic Acid Ferment Preparations, consisting of F. G. Novy, chairman, John Howland, A. I. Kendall, H. I. Lillie and L. F. Rettger. The article which was adopted and included in New and Nonofficial Remedies, 1924, retained the statement quoted in the preceding paragraph. In addition, this article contained the following in reference to the use of *Bacillus bulgaricus* preparations:

"Recent observations seem to indicate that *Bacillus bulgaricus* cannot be implanted or made to proliferate in the intestine even when administered in large numbers. Much doubt is cast, therefore, on any alleged physiologic action of this organism in the intestine. For this reason, and because *Bacillus acidophilus*, according to reports, can be successfully implanted, the preference is now given by many to lactic acid bacillus cultures prepared with *Bacillus acidophilus*.

"There is little, if indeed any, satisfactory proof that liquid cultures or aqueous suspensions of lactic acid-producing organisms are of real value as local applications to mucous membranes or in arresting putrefaction or suppuration in wounds, abscesses and sinuses. In such conditions, their use appears to be still in the experimental stage."

In consonance with these statements, the Council has accepted *Bacillus acidophilus* preparations for New and Nonofficial Remedies. As a condition for such acceptance, it is required that they be marketed under nonproprietary descriptive names with a declaration of the number of viable organisms in a given quantity at the time of sale. The Council has continued the inclusion of *Bacillus bulgaricus* preparations, requiring, however, a revision of the claims in accordance with the doubtful status indicated in the quoted statement. In particular, it has required that no positive claim for their usefulness as external applications shall be made.

Recently the question was raised whether the successful implantation of *B. acidophilus* might be secured in other ways than through administration of *Bacillus acidophilus* milk, and the question was also raised whether *Bacillus bulgaricus* preparations were worthy of continued recognition. To obtain information on these questions, a questionnaire was sent by the chairman to his associates on the Council's Committee on Lactic Acid Ferment Preparations (A. I. Kendall, H. I. Lillie and L. F. Rettger) and to others known to have studied the *Bacillus acidophilus* problem (C. A. Bass, L. M. Gompertz, Nicholas Kopeloff and J. C. Torrey). The questions, together with the answers received are as follows:

Question 1: Is there any good experimental evidence which shows that, in man, intestinal implantation of B. acidophilus *can be brought about by the use of preparations such as broth cultures, concentrated cultures, blocks, tablets or oil suspensions?*

To this the first consultant replied: "There is none whatever. Theoretically it could be brought about by the use of these preparations, but it is not possible for the patient to take a sufficient quantity of them to accomplish such results. It would require 20 tons of the tablets and 8 gallons of the broth culture that I have examined to be equal to one quart of acidophilus milk (See *Southern Medical Journal* **16**, January, 1923)."

The second consultant answered "yes" for broth cultures and concentrated cultures, and "no" for blocks, tablets and oil suspensions.

The third consultant wrote, "Probably not when used without supplemental dietary measures."

The fourth consultant replied "yes" for broth cultures and concentrated cultures, "no" for blocks, tablets and oil suspensions. "Only on theoretical grounds following analysis of present commercial products." He quoted Bass as making calculations showing impracticability and added, "But there are no satisfactory feeding records published."

The fifth consultant stated: "We obtained favorable results by feeding *large* amounts of broth cultures which were *fresh* at the time they were used (Intestinal Flora, Yale University Press). Dr. Torrey has also made such claims. I know of no substantial claims about the other products."

The sixth consultant wrote: "I do not believe that intestinal implantations with *B. acidophilus* can be brought about in man by the use of blocks, tablets, or petrolatum suspensions. I know of no experimental studies demonstrating that such implantation may be secured by these agents. In my experience controlled by careful, cultural examinations on a number of individuals, successful so-called implantation may be secured by broth cultures of *B. acidophilus*, especially when given with a moderate amount of lactose (see under 3). The dosage recommended by distributors of broth cultures is generally, I believe, inadequate. At least they have never submitted satisfactory experimental evidence that implantation may be secured with such dosage."

Question 2: Is there any such evidence which positively demonstrates that implantation cannot be effected by the foregoing means?

To this the first consultant replied: "In the light of abundant information that it requires very large numbers of acidophilus bacilli to bring about desired transformation of the intestinal flora and the definite information of the very small number of organisms present in the commercial preparation referred to above, no further information is needed. This would especially be the case with investigators who are familiar with the slow multiplication of acidophilus bacilli as compared with other bacteria. They would hardly be interested in trying such preparations."

The second consultant referred to his answer to question 1.

The third consultant said: "'Positively' is a strong word—probability, however, against positive implantation if conditions in question 1 are adhered to."

The fourth consultant answered: "No (except possibly in the case of tablets—see Bass)."

The fifth consultant replied: "Aside from broth cultures, I know of no definite evidence that these products bring about implantation."

The sixth consultant answered: "Not to my knowledge."

Question 3: Will the administration of the foregoing cultures along with large doses of lactose or of milk bring about implantation?

To this the first consultant replied: "Transformation of the intestinal flora to where acidophilus bacilli and other therapeutic bacteria predominate may be brought about by feeding of lactose or of milk alone. It is no doubt true that a very small number of bacteria present in the preparations referred to may contribute in some slight way to the change in the flora in the presence of such diet."

The second consultant stated: "Yes, with milk or broth cultures."

The third consultant replied: "The chances for successful implantation are better with lactose or milk, and quite good if the remainder of the diet is correct and the culture can grow in the alimentary canal."

The fourth consultant answered: "With lactose, yes (see Torrey, Rettger and Cheplin). With milk, probably not."

The fifth consultant stated: "If fresh and administered in large quantities, broth cultures have been shown to do this. I know of no authentic, or any real claims, that the other products do."

The sixth consultant wrote: "My experience leads me to believe that as successful implantation of *B. acidophilus* may be secured with a dosage of 3 to 8 ounces of *B. acidoph-*

ilus broth culture per diem if accompanied with a moderate amount of lactose—about 25 Gm.—as with a liter of *B. acidophilus* milk per diem. My evidence on this point has not as yet been published."

Question 4: Is it justifiable to hold that commercial acidophilus milk is the only means which will bring about implantation?

To this the first consultant replied: "There is no other practical means at the present time, and fundamental principles involved do not lead to any hope that there may be any found in the future. This subject is thoroughly, scientifically and practically treated in a recent book on 'Lacto Bacillus Acidophilus' by Kopeloff; Williams and Wilkins, publishers."

The second consultant answered "no."

The third consultant also answered "no."

The fourth consultant wrote: "No—because Kopeloff has shown that acidophilus therapy is essentially a bacteriologic phenomenon. Therefore, an adequate supply of organisms from any source whatever will produce the effect."

The fifth consultant stated: "No. But other cultures, and all cultures must as a rule be administered in large amounts. Without use of lactose or dextrine 'flooding' of intestine is necessary."

The sixth consultant wrote: "Decidedly no. The strains of *B. acidophilus* used in preparing *B. acidophilus* milk are no more truly typical for this group than those generally found in broth cultures. In fact, the X-strain of *B. acidophilus* which is generally employed in preparing milk cultures is a type which is rarely normally found in the human intestine."

Question 5: Has any evidence been produced during the past five years justifying the retention of preparations of B. bulgaricus *in New and Nonofficial Remedies?*

To this the first consultant replied: "None whatever. Not only is this the case, but abundant evidence has been produced showing that they are absolutely worthless. They should be discontinued."

The second consultant answered "no."

The third consultant wrote: "Not for intestinal implantation. The highly important question of the remoteness of cultures of *Bacillus acidophilus* is entirely omitted in this discussion. Long continued artificial cultivation of *B. acidophilus* tends to reduce the organism to the state of *B. bulgaricus*—a purely milk parasite with no human adaptation ability."

The fourth consultant also replied "no."

The fifth consultant answered: "No, unless it be advocated merely for use in production of sour milk as such, without any claim of implantation in intestine."

The sixth consultant replied: "Not to my knowledge. In fact, I believe that the evidence which has accumulated during the past five years has indicated that no implantation whatever may be secured by *B. bulgaricus* preparations. (See Kopeloff's *Lactobacillus acidophilus;* Williams and Wilkins, publishers). I believe, however, if it was justifiable to retain preparations of *B. bulgaricus* in New and Nonofficial Remedies five years ago, it is still justified; in my opinion, these preparations owe whatever curative value they have to the food element and to the lactic acid which they contain."

In his letter accompanying the questionnaire the first consultant adds the following comments:

"In addition to the opinions expressed in my answers to your questionnaire, I would also call attention to the fact that commercial acidophilus milk deteriorates very rapidly in its bacterial content after about three days, and that after some six or eight days becomes practically worthless so far as its bacterial content is concerned. For that reason the milk cultures accepted for New and Nonofficial Remedies, as listed in your letter, are of little value as they are now being used. My opinion is that the most practical method of employing acidophilus bacillus therapy is through the use of a good quality of acidophilus milk produced and distributed in the same manner that other forms of buttermilk are now produced and supplied. Acidophilus milk is as good form of buttermilk as any other from the standpoint of taste, nutritive value, etc., and it has the additional advantage of whatever therapeutic value *Bacillus acidophilus* may have."

Similarly the fourth consultant wrote: "May I say that I feel very strongly on the matter of the declaration of manufacturers of an adequate number of organisms per cubic centimeter of acidophilus preparations. Since acidophilus therapy has been proved to be essentially a bacteriologic phenomenon, the necessity for a large number of viable organisms seems to me evident. My personal experience is that when the count drops below 100 million per cubic centimeter, the results are not satisfactory. I must confess, however, that I have not compiled extensive experimental data on this point and criticize my colleagues for even less attention on the same score.

"One other point I should like to bring up for your consideration, and that is that where the Council requires a declaration of numbers it should be clearly stated whether these numbers refer to the content at the time of manufacture or at the time that it is placed in the hands of patients. It would seem to me that the emphasis should be placed on the latter."

The fifth consultant replied: "Acidophilus therapy depends on two factors, *B. acidophilus* itself and acidophilus-stimulating substances (lactose and dextrin). Of no little importance is the use of lactose or dextrin in bringing about intestinal implantation. In the complete or almost complete absence of these substances in the diet or in the material administered, very large numbers of the organism are required, and indeed what amounts at times to 'flooding' of the intestine is necessary. Even when fresh acidophilus milk is used, our experience has shown that a pint or more daily is desirable.

"Broth cultures may contain large numbers of *B. acidophilus* when perfectly fresh. The holding of such cultures over long periods of time, and the practice of prescribing and using teaspoonful doses, defeat the purpose of *B. acidophilus* therapy. If they could be and were to be used in large doses, and while perfectly fresh, and if lactose or dextrine were taken with the cultures, they might serve a real purpose; but this is not the practice.

"Some candies are now in the market which are alleged to contain immense numbers of *B. acidophilus.* We have examined one of these products on two different occasions, and the conclusion was forced on us that the organism present in the candy was not real *B. acidophilus,* but an acidophilus-like organism, in some respects not even resembling *B. acidophilus.*

"*B. acidophilus* has a very low degree of viability in powders, tablets, and concentrates in general. The use of an acidophilus-like organism, not *B. acidophilus,* may become a practice among those who want to employ the drug store and pill box method, and do much harm to acidophilus therapy."

H. I. Lillie (rhinologist), who has served on the committee because of his knowledge in regard to the external use of *Bacillus bulgaricus* preparations, replied: "I am unable to answer any of your questions regarding the preparations of *B. acidophilus,* because since the last inquiry I have not kept interested in these articles. I regret that I am thus unable to be of any service to you."

In consideration of the opinions received, the Council decided:

1. Bacillus acidophilus milk, and broth cultures and concentrates of *B. acidophilus* will continue to be accepted provided the preparations are marketed under nonproprietary descriptive names; provided the number of viable organisms contained in a stated quantity at the time of sale is declared on the label or in the advertising (after 1927 this declaration must appear on the label); provided the label bears an expiration date; and provided that for broth cultures and concentrates the advertising emphasize the need of coincident administration of carbohydrate (lactose or dextrin).

2. Other preparations of *B. acidophilus,* such as tablets, emulsions and candies ("blocks") will not be accepted unless adequate evidence is presented to show that the implantation of *B. acidophilus* may be secured through their use; if such evidence becomes available they will be accepted under the conditions outlined under 1.

3. *Bacillus bulgaricus* preparations will be retained, provided the claims for these are revised in accordance with modern opinion to show that they are considered to be of value only in the preparation of soured milk and that all claims for their intestinal implantation and their value as external application be discontinued. After 1927 it will be required that each preparation bear on the label a declaration of the number of organisms contained in a given quantity at the time of sale, and that the label contain an expiration date.

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SATURDAY, JULY 17, 1926

THE MICROBE OF OROYA FEVER

In certain mountain slopes, notably on the western side of the Andes in Peru, there occurs a long known disease that has been described as more destructive than smallpox and almost as disastrous as plague. The malady is commonly designated as Oroya fever because of the location of a severe outbreak many years ago among the workmen building the Central Railway between Lima and Oroya, when it was estimated that at least 7,000 persons died. This specific communicable disease is characterized clinically by a rapidly progressing severe anemia, associated with febrile reactions. In the red blood cells of patients suffering from Oroya fever, Barton[1] found, in 1905, peculiar bacilliform elements, the specificity of which has been confirmed by Barton's subsequent observations and those of later investigators. Strong, Tyzzer, Sellards, Brues and Gastiaburu[2] concluded that these bodies are of protozoan nature and proposed for them the name of *Bartonella bacilliformis*. Their cultivation, however, had not been achieved, and the problem offered opportunity for the trial of procedures recently developed for the cultivation of certain spirochetes, flagellates and rickettsia-like micro-organisms.

Success in such a venture has at length been reported from the laboratories of the Rockefeller Institute for Medical Research by Noguchi and Battistini.[3] It illustrates the advantage that may come from new technic in the field of microbiology. A pure culture of *Bartonella bacilliformis* has been obtained from blood taken during life from a patient with Oroya fever who died at Lima, Peru. The organism is an obligate aerobe, is gram-negative, and under certain cultural conditions is motile. All forms that have been described as occurring in human red corpuscles may be found in the cultures. Inoculation of the latter into young *Macacus rhesus* monkeys induced intermittent fever lasting many weeks. Typical endoglobular forms of *Bartonella bacilliformis* have been demonstrated in the red blood corpuscles of these animals. Intradermic inoculation of the culture into the eyebrows gave rise to highly vascular nodules, resembling the nodules of experimental verruga induced in monkeys by previous investigators. *Bartonella bacilliformis* can readily be recovered in pure culture from the blood, lymph glands, spleen and nodules, and passages from animal to animal are easily carried on.

Oroya fever is sometimes designated as Carrion's disease, and has at times been assumed to be a manifestation of verruga peruviana. This conclusion seemed to be supported by the experiment of Carrion, a Peruvian student who, after inoculating himself with blood of a patient exhibiting verruga, died with clinical symptoms said to resemble Oroya fever. The incident is one of the heroic deeds that have characterized many martyrs to the medical sciences. According to the latest investigators, there can no longer be doubt that Oroya fever and verruga can exist together, either one preceding in appearance the other.

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[1] *Barton*, A. L.: Crón. méd. **26**: 7, 1909.

[2] Strong, R. P.; Tyzzer, E. E.; Sellards, A. W.; Brues, C. T., and Gastiaburu, J. C.: Report of First Expedition to South America, 1913, Harvard School of Tropical Medicine, Cambridge, 1915.

[3] Noguchi, Hideyo; and Battistini, T. S.: A Preliminary Report on the Cultivation of the Microbe of Oroya Fever, Science **63**: 212 (Feb. 16) 1926; Etiology of Oroya Fever, I, Cultivation of Bartonella Bacilliformis, J. Exper. Med. **43**: 851 (June) 1926.

THE NATURE OF FILTRABLE VIRUSES

Experimentation permits voluntary control, in one way or another, of nature's phenomena. Their beginning, their progress and their ending may be modified by human intervention. It is, as Lee has expressed it, an artificial aid to simple observation. From this standpoint it will readily be understood that novel technic is the essence of progress in scientific endeavor. Given a new method, the resourceful investigator is more than likely to make a worth while contribution. This is well illustrated in the history of our knowledge of disease-producing agents. Without the microscope and the development of its use, the mystery of the minute could not readily be penetrated. Inference replaced direct observation. Then came the greater familiarity with microscopic life, its generation and transfer. Yet, prior to 1880, a bacterial cause had been demonstrated in only three diseases.

In 1871, Weigert succeeded in staining bacteria with picrocarmine, but it was not until 1876—only fifty years ago—that he used the aniline dyes for this purpose and thus opened up a new field that was exploited with such success by Ehrlich, Koch, Gram and others. During the decade 1880-1890, the causes of a number of important diseases were discovered. The day of securing "pure cultures" of micro-organisms had arrived. Progress was facilitated by Koch's device of preparing solid transparent mediums by adding gelatin to beef broth. Subsequently, Frau Hesse introduced agar-agar mediums, which, unlike gelatin, will remain solid at body temperature; and thus the range of research possibilities was extended still further.

The problems of microbial agents are, however, by no means solved. Some of them, such as the Rickettsias, have interposed great difficulties that tantalize investigators in a day when progress seems to be measured in weeks rather than in years by those not thoroughly conversant with the limitations of research. Most puzzling of all, at the present moment, are those disease-producing agencies currently classed as filtrable viruses. The virus of smallpox and probably that of vaccinia are filtrable; in fact, as many as forty viruses have been placed in this group, passing readily and in full strength through every kind of porcelain filter. Of these there are some in which it is easy to demonstrate this fact, because the disease can readily be reproduced by the inoculation of the clear filtrate; but there are others, severe or fatal diseases of human beings, which have every appearance of being of the same nature in which filtrability of the virus has not been demonstrated, probably because no other animals are susceptible and no one has ventured to inoculate human beings. Rheumatism is apparently such a disease.

The study of poliomyelitis illustrates what a consideration of filtrable viruses now involves. In a recent review, MacCallum[1] has noted that the investigation of this disease seems to be set aside as practically completed. It seems that with extensive knowledge of the clinical symptoms and the anatomic changes, and with the demonstration of a filtrable virus capable of reproducing identical conditions in monkeys and of being cultivated in artificial mediums, the comprehension of the disease should be satisfactory. But we cannot see the organism ordinarily, except in the form of globoid bodies in incubated tissues and in cultures; and since we know little of the relation between these granules and the invisible virus in the water-clear filtrate which is yet so potent, it can hardly be said that we understand the life history of this organism.

What is the outlook with respect to the filtrable viruses? One has the impression, MacCallum comments, that progress is slow because we still use blindly the methods of investigation that have been worked out with such effort for bacteria. When some one succeeds in devising new conceptions—as new as the use of aniline dyes and solid mediums were for the early days of bacteriology—progress may be rapid. It seems far from impossible that totally different mediums may be necessary for the cultivation of these minute organisms, and that quite different principles of immunity may prevail. One organism properly worked out should serve as a model for all the rest. It is intriguing, MacCallum concludes, to reflect that while we know of the existence of only the filtrable viruses that produce disease, there are doubtless thousands of such minute living creatures round about us that will forever escape our perception.

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[1] MacCallum, W. G.: Present Knowledge of Filtrable Viruses, Medicine 5:59 (Feb.) 1926.

COLLEGE ATHLETICS AND HEALTH

To physical exercise has been assigned the rôle of both the cure and the cause of various bodily ills. It should be noted, however, that fitness is, or should be, a requisite for participation in athletics, particularly of the severely competitive sort, such as college games. William James[1] expressed the hope that here in America more and more the ideal of the well trained and vigorous body might be maintained neck and neck with that of the well trained mind as the coequal halves of the higher education for men and women alike. Exercise and competitive athletics are, however, not quite synonymous. One may lead to overdoing; in any event, it often calls for the utmost that strength can marshal.

The absence of the educational point of view in the management of school and college athletics and the emphasis on the professional, spectacular and exhibitive elements have frequently been deplored.[2] There is little doubt that wholesome changes are being instituted extensively in our American institutions. Participation in athletic sport now has a sufficiently long history in the United States to permit a careful study of possible harmful influence on the health of the college man. It should presently be simple to ascertain whether the claims of "overstrain" and increased death rates from degenerative diseases in former athletes are in any degree warranted. A decisive answer is essential for any justifiable program of college athletics in the future.

A preliminary analysis of mortality among athletes and other graduates of a large university has recently been undertaken by Greenway and Hiscock.[3] They preface their report with the comment that for several reasons it is not surprising that the results of these longevity studies have given evidence favorable to the athlete, for he is a highly selected person. The college body as a whole represents a group selected from different communities. Students who successfully cope with the course of study and the stress of college activities and later graduate are even more highly selected. The men who qualify physically and otherwise for a varsity team are subject to still further medical selection throughout their course. Another factor of immense importance in these studies is the basis of comparison. Comparison between college athletes and the general population, or even insured groups, may be exceedingly misleading unless standard tables representing groups of fairly similar status are utilized. Even data for average young men of corresponding ages who are accepted for life insurance must be used with extreme caution. Standards developed some years ago would obviously give the college man of recent years an unfair advantage because of the gratifying extension of the life span of the general population.

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[1] James, William: Talks to Teachers on Psychology, New York, Henry Holt & Co., 1916, p. 205.

[2] Williams, J. F.: Personal Hygiene Applied, ed. 2, Philadelphia, W. B. Saunders Company, 1925, p. 25.

[3] Greenway, J. C., and Hiscock, I. V.: Mortality Among Yale Men, Yale Alumni Weekly 35:1086 (June 11) 1926.

The Yale observations have been directed to determine on a fairly large scale the facts regarding the mortality of the college men who participate most actively in major sports in comparison with their associates who are not varsity men. They lead to the conclusion that the life expectancy of college graduates is somewhat higher or more favorable than that of the average young man accepted for life insurance. So far as the figures are reliable for the age groups concerned, there is no evidence to indicate injuries to the health of students by athletic sports conducted under such supervision as is enforced at Yale. It would appear that men of the type who make athletic leaders are likely to expose themselves, in war and in peace, to excesses of physical injury that are escaped by their less active associates. To secure dependable data with respect to the older age periods when degenerative diseases are more common will call for extensive statistics secured on a much more elaborate scale. Such an investigation of the longevity of college athletes is now contemplated under the auspices of a number of national organizations interested in student health.

Current Comment

THE EFFECTS OF CARMINATIVE VOLATILE OILS

Aromatic carminatives have been employed in medical practice for many years. The substances included in this list seem extremely heterogeneous to a critical student. The larger number are either volatile oils or alcohols. The indications for their use seem to be no less varied than the definitions of their varied actions. In general, it has been asserted that they affect the gastro-intestinal tract, increasing peristalsis and serving to hasten the passage of gas through the stomach and bowel. They induce hyperemia of the gastro-intestinal mucous membranes and probably increase the appetite and digestion. Other definitions dispose of the carminatives more succinctly by charging them merely with the relief of flatulence. In the group that comprises alcohol, capsicum, cardamom, cloves, ginger, mustard and volatile oils, it is not always easy to distinguish between condiments and carminatives. That the latter are not to be classed merely as placebos or irrationally used therapeutic agents seems probable from the studies of Plant and Miller[1] of the State University of Iowa, who have investigated the effects of the oils of peppermint, cinnamon, anise, caraway, wintergreen, fennel and orange. Briefly summarized, their experiments indicate that the primary effect of these carminatives, in concentrations and doses comparable to those used clinically, is to relax the stomach and increase the tone and contractions of the small intestine and colon. Relief of discomfort by carminatives after a full meal can be understood easily in view of the relaxation produced by them; while in the intestine the effects of distention with gas or fluid would be relieved by increase in tone and contractions. In this instance, as has often been the case, empiric experience is supported by scientific investigation.

THE ORIGIN OF FECAL FAT

The daily intake of fats in the diet of the "average" adult person in this country approximates 100 Gm. or more. It is commonly taught that in conditions of health this component of the ration is utilized to the extent of about 95 per cent. This has been determined by ascertaining the amount of fatty substance excreted in the stools, the assumption being that fecal fat represents the unabsorbed residue of the food fats. It has long been known, however, that substances of a fatty character may be present in the excrement in the absence of food; hence they must have an endogenous origin. This has been confirmed in the studies of Sperry[1] at the University of Rochester, N. Y., who has observed that fatty substances continue to be excreted in experimental animals that have been kept for several weeks on a diet that is lipid-free, the term "lipid" being used in accordance with the recommendation of the International Congress of Pure and Applied Chemistry to include the fats and all substances ordinarily associated with them; i. e., neutral fat (esters of fatty acids and glycerol), fatty acids, soaps, phospholipids, sterols, and esters of the sterols and fatty acids. The composition of the lipids excreted by different animals under the same conditions has been found in most cases to be remarkably uniform, though there has been considerable variation in the amount. Bacteria, which may develop in enormous numbers in the intestinal tract, have been suggested as possible sources of the fecal fat. It is scarcely probable that even the maximal development of such micro-organisms could account for the actual quantities of the fat excreted with the stools. The fatty material isolated from it resembles the blood fat quite closely; for this reason it can scarcely be regarded as derived solely from the bile, which is well known to be a lipoid carrier. Furthermore, as the fecal fat yields in large measure the readily usable stearic and palmitic acids, one would expect them to be reabsorbed if they were carried into the intestine by the bile. Sperry rather believes that they are derived more directly from the blood. The presence of usable fatty acids not bound to sterols, he argues, makes it probable that fecal lipids enter the intestine through its walls below the absorbing portion rather than through the bile. The similarity to plasma lipids indicates that they represent some sort of leakage, and the suggestion has been made that the leakage has the purpose of lubricating the intestine. On the other hand, Sperry concludes, some evidence has been presented in favor of the view that the lipid excretion is concerned with removing undesirable or excess sterols from the organism. The work of the Rochester laboratory seems to be bringing us back to the contention of Müller, forty years ago, that a large proportion at least of the fecal lipids comes from some other source than unabsorbed food. The continued excretion of these substances over long periods by animals receiving no lipids in their food leaves little doubt concerning this point.

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[1] Plant, O. H., and Miller, G. H.: Effects of Carminative Volatile Oils on the Muscular Activity of the Stomach and Colon, J. Pharmacol. & Exper. Therap. 27: 149 (March) 1926.

[1] Sperry, W. M.: Lipid Excretion, III, Further Studies of the Quantitative Relations of the Fecal Lipids, J. Biol. Chem. 68: 357 (May) 1926.

OCCUPATIONAL HAZARDS

Modern industrial hygiene is concerned with health hazards of both a specific and a nonspecific character. Some of the latter are decidedly general in their sanitary aspects. They relate to the proper construction of industrial establishments with installation of appropriate safety devices, with proper provisions for light and air, and with the utilization of suitable arrangements for personal hygiene. As a recent writer has expressed this aspect of the problem, if industrial conditions are faulty, one or more of the organs of the body may become impaired and this may predispose to or actually produce local or general diseases that may not be peculiar to any specific occupation. This is in contrast with the strictly occupational menaces caused by toxic agents, infectious micro-organisms, or faulty environment under specific conditions of employment. In the quarries there are harmful dusts to be reckoned with; in the tanneries, the germ of anthrax on the hides may be awaiting its unsuspecting victim; the modern garage is liable to bring death insidiously through the medium of carbon monoxide fumes; and there are factories where lead or zinc or arsenic must be scrupulously guarded against. In some industries the complexity of processes and organization has made the possibilities of harm manifold far beyond the conceptions of former days. What this may actually mean has recently been described for the rubber industry by Quinby.[1] Among the important menacing chemicals, for example, are lead, which is incorporated into rubber in various ways; aniline, used as an "accelerator" of vulcanization; benzene, a valuable solvent, and hexamethylenetetramine, also used as an accelerator. Hexamethylenetetramine has long been used in medicine and is described in the new Pharmacopeia under the official title methenamine. Nor is the rubber industry the only one in which hexamethylenetetramine constitutes a hazard, for this compound is used in the preparation of artificial phenol resins, such as bakelite and redmanol. Of lesser importance, among numerous other accelerators, because they are less used or are less toxic, are antimony, benzine, carbon disulphide, carbon tetrachloride, sulphur chloride, and paranitrosodimethylaniline. The recital of these details will suffice to emphasize what the control of occupational diseases and hazards really means in modern industrial life. The rational management of the situations thus created represents a growing field of employment for the physician of today. Medical practice changes with the passing generations.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Personal.—The governor has appointed Dr. Herbert M. Robertson, Santa Ana, a member of the state board of medical examiners.——Dr. Trusten P. Peery, Yuba City, has been appointed health officer of Sutter County, succeeding Dr. Allen E. Gray.——Dr. George M. Webster has been appointed medical superintendent of the Southern California State Hospital at Patton, to succeed the late Dr. John A. Reily.——Dr. Gilbert A. Kelley, Bridgeport, has been appointed health officer of Mono County.

Immunization Campaigns.—During the first five months of this year, 7,138 persons in San Diego were immunized against smallpox, and 1,209 children were immunized against diphtheria; smallpox appeared in virulent form during this period but subsided as the number of vaccinations increased.——A campaign conducted recently in Orange County under the supervision of Dr. Virgil G. Presson, health officer, accomplished 6,912 vaccinations against smallpox and 6,309 immunizations against diphtheria.

Physicians on Probation.—At the March meeting of the state board of medical examiners in Los Angeles, Dr. William S. Fowler, Bakersfield, was placed on probation for five years and denied permission to prescribe narcotics during that period; Dr. Wendell O. Gregg was found guilty of unprofessional conduct and given five years' probation; his licenses for prescribing narcotics and liquor were ordered revoked; Dr. Edward O. Hanlon was placed on three years' probation by the board, with the understanding that he give up and not apply for federal narcotic or alcohol permits during that period.

Conference of Health Officers.—The annual conference of health officers of California will be at Yosemite, August 16-19, in conjunction with the convention of the League of California Municipalities. Health officers planning to attend should advise the secretary, Dr. Frederick W. Browning, Hayward. Summer rates to Yosemite are in effect on the railroads, and the new water-level route for automobiles will be open, August 1. The subjects for discussion will include, among other things, poliomyelitis, scarlet fever and typhoid, a review of the recent smallpox outbreak, and reports on the status of immunization against diphtheria.

Suggestions for Lectures.—The next course of medical lectures of the San Diego County Medical Society will be given by Philip A. Shaffer, Ph.D., professor of biologic chemistry, Washington University School of Medicine, St. Louis, in January, 1927. While the subjects will deal, generally, with uremia, acidosis, alkalosis, diabetes, nephritis and the chemistry of nutrition and diet, Dr. Shaffer requests that the members of the medical society suggest topics for the series. A blank has been prepared for suggestions and for the purpose of signing up for the course of lectures; it should be mailed to Dr. David R. Higbee, 408 Watts Building, San Diego.

COLORADO

Course for Health Department Employees.—The Department of Health and Charity of the City and County of Denver is giving a course of lectures three times a week during the summer to the inspectors of the health department and the nurses from the tuberculosis dispensary on the fundamental principles of preventive medicine and public health. The lectures are given by Severance Burrage, Ph.D., associate professor of the department of bacteriology and public health, University of Colorado School of Medicine.

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[1] Quinby, R. S.: Health Hazards in the Rubber Industry, J. Indust. Hyg. 8: 103 (March) 1926.

ILLINOIS

Only Graduates Eligible in Illinois.—In the state board statistics, published in The Journal, May 15, one applicant in Illinois was reported as an undergraduate. Further investigation revealed the fact that a diploma, although belated, had been granted to the applicant prior to the time he took the Illinois examination.

Cultists in Court.—O. B. Nelson, Rockford, a chiropractor, was given a suspended sentence of $100 and costs, it is reported, June 30, for violation of the state medical practice act, and was released on payment of the court costs. Naprapaths Charles Dahl and Jessie B. Roberts, who are said to have been arraigned also for violation of the medical practice act, were granted a continuance in order to prepare a defense.

State Health Council Formed.—Representatives of the Illinois State Medical Society, the state department of public health, the Illinois Tuberculosis and Public Health Association, the Illinois State Association of Graduate Nurses, the Illinois Society for Prevention of Blindness, the Chicago Heart Association and the Illinois Society for Mental Hygiene met in Chicago, June 14, and after a full discussion passed a motion that the organizations and their representatives present constitute the temporary organization of a state health council. A committee on principles, procedure and by-laws, consisting of the authorized representatives present at this meeting, was named and Dr. Jacob C. Krafft was elected chairman. The council will meet in Chicago, September 20, to receive the report of the committee. Other state organizations were invited to be present at the organization meeting. J. W. Becker was elected chairman, and Dr. Grace S. Wightman, secretary, of the temporary organization.

IOWA

University News.—The construction of the main building of the 736 bed hospital of the University of Iowa will start soon. The cost will be shared equally by the state and by the Rockefeller Foundation. The building will be on the medical campus of the university, and together with the hospital buildings already completed will provide about 1,200 beds for the medical group.

State Health Commissioner Resigns.—Dr. Don M. Griswold, who has been on a year's leave of absence from the University of Iowa, has resigned his position as state health commissioner of Iowa, effective, July 1, and will return to his post at the university. The governor has appointed Dr. Henry Albert, director of laboratories, University of Nevada, to succeed Dr. Griswold as state health commissioner. Dr. Albert is a graduate of the University of Iowa, where, for many years, he was head of the department of bacteriology.

Society News.—The fifty-third annual meeting of the Des Moines Valley Medical Association was held at Ottumwa, June 16-17. Motion picture films of the stomach, prepared under the direction of Dr. Louis Gregory Cole, New York, were exhibited; medical clinics were conducted by Dr. Frank Smithies, Chicago, and Dr. Don S. Sutton, Chicago; surgical clinics by Dr. Arthur E. Hertzler, Kansas City, Mo., and Dr. Philip H. Kreuscher, Chicago, and a urologic clinic by Dr. Jonathan Edward Burns, Kansas City, Mo.; in the afternoons, there were addresses, and in the evening a banquet at the Country Club. All physicians, in accord with the ethics of the American Medical Association, were invited to be present.

KENTUCKY

Society News.—Fourteen crippled children from various parts of the "pennyroyal section" left for Louisville, June 29, to enter hospitals for the correction of their deformities; these children were selected at the recent clinic held at Hopkinsville under the auspices of the Kentucky Crippled Children's Society.——Dr. William D. Haggard, former President of the American Medical Association, addressed the Third Medical Society at Scottsville, June 30.

New Trachoma Hospital.—Work will soon start on a thirty-five bed trachoma hospital to be established by the U. S. Public Health Service in cooperation with the Kentucky State Board of Health and the state medical society on the estate of Mrs. Elizabeth Irvine in Richmond. It will be known as the Ephraim McDowell Memorial Hospital. Funds for its maintenance have been provided by the Kentucky state societies and the state board of health, and the U. S. Public Health Service will provide the medical personnel. The public health service has other trachoma hospitals in Arkansas, Missouri and Tennessee.

LOUISIANA

Personal.—Dr. Rudolph Matas, New Orleans, recently received the honorary degree of doctor of laws from the University of Alabama.——Dr. Hymen L. Cohen will succeed Dr. James N. Lockard as chief resident physician at Touro Infirmary, New Orleans.

Liquor Ordinance Attacked.—Application has been made to the federal court for a writ to compel the prohibition administrator to issue permits to certain persons in Tangipahoa Parish to prescribe and dispense medicinal liquor under the national prohibition law. The applicants allege that they have properly applied for a permit and been refused on the ground that there is an ordinance in Tangipahoa Parish forbidding the prescribing and dispensing of liquor for medicinal purposes (The Journal, March 28, 1925, p. 990).

Tulane Discontinues Dental School.—At a meeting in New Orleans, July 2, the board of administrators of Tulane University of Louisiana voted to discontinue the dental school, it is reported, after the close of the present fiscal year. A lack of funds sufficient to continue the school on a standard equal to that of other departments of the university is given as the reason. The dental school was the only school of the university that has been operated without an endowment. The board has not wholly abandoned the idea of operating the dental school, but has decided that it must be operated on an endowment basis.

Legislative Notes.—The so-called hospital abuse bill (The Journal, June 19, p. 1917), which refuses admission to the Charity Hospital, New Orleans, to those who are not destitute and poor, and making a violation of the law a misdemeanor, became a law without the governor's signature.——The sterilization bill, which, if enacted, would have empowered the state to sterilize feebleminded persons confined in state institutions, was disapproved in the house, June 29, by a vote of 48 to 46.——The senate defeated the antievolution bill, June 23, by a vote of 19 to 17; the house had previously approved the bill by a vote of 52 to 43. The defeated bill would have made it unlawful to teach that man originated from a lower form of animal life.

Hospital News.—The French Hospital, New Orleans, opened its doors, June 30, after being closed for about three years for repairs. The French Hospital, founded in 1833 to care for the sick of the French colony, has always been favored by the French government, and the present French consul is the honorary president. The hospital has a capacity of 110 beds, and is open to the physicians and the public of New Orleans.——Mercy Hospital, New Orleans, has let the contract for a new group of buildings to be known as the Leonce M. Soniat Memorial, and construction work will begin at once on the first wing at Annunciation and Melpomene streets; ultimately the memorial will be a 250 bed hospital. Mrs. Leonce M. Soniat donated the grounds, the present buildings and an endowment of $160,000 to Mercy Hospital, with the provision that the income be used to treat patients who are unable to pay, and that an especially low rate be given other patients who are able to pay a smaller fee than the usual prevailing rates.——A new fifty bed sanatorium for negroes was opened in Shreveport in May.

MASSACHUSETTS

License Revoked.—The board of registration in medicine writes that after a hearing held, June 3, the license of Dr. James O. Lacaillade, Boston, to practice medicine in Massachusetts was revoked.

State Cancer Hospital.—The legislature recently passed a bill appropriating $100,000 to convert the Norfolk State Hospital into a hospital for the treatment of advanced cases of cancer, and $15,000 to establish cancer clinics. The state commissioner of health has appointed an advisory committee of sixteen physicians and laymen to assist in carrying out the provisions of the bill.

Hospital News.—The mayor of Boston has submitted to the city council orders for financing improvements to the Boston City Hospital totaling $1,312,500; almost $700,000 of this amount is for a new seven-story surgical building, and about $400,000 for enlarging the nurses' home. A new maternity building at the hospital is now under construction. By a special act of the legislature in 1924 the city was empowered to expend $3,000,000 for city hospital improvements.——The Framingham Hospital recently successfully completed a campaign for $350,000 for new buildings.

Personal.—Dr. Harris P. Mosher, Boston, received the honorary degree of doctor of science at the June commencement of the University of Pennsylvania.——Dr. Philemon E. Truesdale, Fall River, has been elected president of the Harvard University Medical School Alumnae Association, to succeed Dr. Elliott P. Joslin.——Dr. Bradford J. Murphey has been appointed chief psychiatrist for the New England Home for Little Wanderers, Boston, which is responsible for about 500 children, most of whom are boarded in foster homes throughout New England.

Howe Laboratory of Ophthalmology.—It was announced at the June commencement of Harvard University that Dr. Lucien Howe, Buffalo, has given $250,000 toward the establishment of an ophthalmologic laboratory as a memorial to his father, brother and father-in-law, who served a total of more than seventy years as army officers in the service of their country. The gift will be supplemented by $175,000 from the General Education Board and $75,000 from Harvard University. For the present the laboratory will be located in the outpatient department of the Massachusetts Eye and Ear Infirmary, where there is a wealth of clinical material; the work will include research and teaching. Dr. Howe, who will become director of the laboratory, has for nearly fifty years been in charge of the Buffalo Eye, Ear and Throat Infirmary, and for almost thirty years has been professor of ophthalmology at the University of Buffalo.

MINNESOTA

Hospital News.—Dr. Horatio B. Sweetser, Minneapolis, was recently tendered a banquet by the Sisters of St. Mary's Hospital, in celebration of his completion of six years as chief of staff of the hospital.

Tour of Indian Reservations.—State and federal physicians made a tour of Indian camps in northern Minnesota, July 9-12, to make a health survey and determine the facilities present. Dr. Herbert G. Lampson of the St. Louis County Public Health Association was in charge of the party, which comprised, among others, Dr. Len L. Culp of the U. S. Indian Bureau; Dr. Benjamin F. Royer, field secretary, National Committee for the Prevention of Blindness, New York; Dr. Emil Krulish, U. S. Public Health Service; Dr. Orianna McDaniel of the Minnesota State Board of Health, and Dr. W. P. Greene of the Minnesota State Health Department. They will visit the reservations at Red Lake, White Earth, Leech Lake, Net Lake and Cass Lake.

Society News.—Members of the Hennepin County Medical Society have volunteered to assist in immunizing against diphtheria and scarlet fever children of parents who are unable to pay, and, in conjunction with the city health commissioner, clinics have been opened in various parts of Minneapolis for this purpose.——The Hennepin County Medical Society, Minneapolis, recently gave a luncheon in honor of Dr. Francis M. Pottenger, Monrovia, Calif., who came to Minneapolis to address the tuberculosis institute conducted by the University of Minnesota.——Among others, Dr. Winford P. Larson, Minneapolis, addressed the fifty-eighth annual meeting of the Wabasha County Medical Society, July 8, on "Immunization and Serum Treatment in Scarlet Fever and Diphtheria"; there was a reception for the visiting ladies at the home of Dr. and Mrs. D. S. Fleischhauer following the annual dinner.——The annual meeting of the Northern Minnesota Medical Association will be at Crookston, August 9-10. Among many other speakers will be Dr. Hilding Berglund, who will conduct a medical clinic Tuesday and give an address on "Constipation," Monday; Dr. Walter E. Sistrunk, Rochester, "The Management of Goiter"; Dr. John F. Norman, Crookston, "Intestinal Obstruction," and Dr. John H. Moore, Grand Forks, N. D., "Pain Relief in Childbirth." Dr. Morris Fishbein, Chicago, editor of The Journal, will speak at the banquet Monday evening, and clinics will be held Tuesday morning by Drs. Carl L. Larsen, St. Paul; Frederic W. Schlutz, Minneapolis; Arnold Schwyzer, St. Paul; Edward L. Tuohy, Duluth, and Henry L. Ulrich, Minneapolis.——Dr. William A. Piper, Mountain Lake, addressed the Southwestern Minnesota Medical Society, Pipestone, recently, on "Rural Obstetrics and a Comparative Study of Its Relation to Puerperal Mortality Statistics."

NEBRASKA

Society News.—The thirty-ninth annual meeting of the Medical Society of the Missouri Valley will be at Omaha and Council Bluffs, September 15-17, with headquarters at the Hotel Fontenelle, Omaha. Among those who will appear on the program or hold clinics are: Dr. Hilding Berglund, Minneapolis; Dr. Elliot C. Cutler, professor of surgery, Western Reserve University School of Medicine, Cleveland; Dr. Irving S. Cutter, dean, Northwestern University College of Medicine, Chicago; Dr. McKim Marriott, dean and professor of pediatrics, Washington University School of Medicine, St. Louis; Dr. Edward C. Rosenow, Mayo Foundation, Rochester, Minn., and Dr. Gabriel Tucker, Bronchoscopic Clinic, University Hospital, Philadelphia. Dr. Arthur D. Dunn, Omaha, is president of the society and Dr. Charles W. Fassett, 115 East Thirty-First Street, Kansas City, Mo., secretary.——Dr. Edson L. Bridges, Omaha, conducted a "dry clinic" before the Cedar, Dakota, Dixon, Wayne and Thurston Counties Medical Society, June 10.——Dr. Theodore H. Koefoot, Broken Bow, has been elected secretary-treasurer of the Custer County Medical Society for the unexpired term of Dr. Charles E. Pinckney, who has moved to Loup City.——Dr. Adolph Sachs addressed the Twelfth Councilor District Medical Society, Scottsbluff, June 8, on "The Cardiac Arrhythmias," and Dr. Ora S. Fowler, Denver, on "The Relation to the Kidney of Abdominal Diagnosis."

NEW YORK

No Diphtheria in Hudson.—The health officer of Hudson, Dr. Charles R. Skinner, reports, according to *Health News*, that there were no cases of diphtheria in that city in the year preceding June 4, while during the previous five years there had been an annual average of twenty-eight cases. Hudson, which has a population of about 12,000, has, since 1923, immunized its school children and preschool children against diphtheria by means of toxin-antitoxin.

Progress of Diphtheria Immunization.—The campaign in New York to rid the state of diphtheria by 1930 is being carried on in fifty-three of the fifty-seven cities in the state of more than 10,000 population; the medical societies of forty counties have endorsed the campaign, and local committees in every county are cooperating. It is reported that the city of Auburn has not had a death from diphtheria in more than two years, as the result of intensive immunization work. During the last six weeks in Yonkers, 3,413 children in the public schools have been immunized by the city health department in addition to those who have been immunized by family physicians.

Personal.—Dr. Joseph Epstein has been appointed assistant physician at White Oak Farm, Pawling.——Dr. Henry W. Rogers, New York, has been appointed physician in charge of Lloyd Hospital for Mental Patients.——Dr. William E. Sylvester resigned as physician in charge at Knickerbocker Hall, Amityville, April 1.——Dr. Aubrey C. Belcher recently resigned as assistant physician at the Brooklyn State Hospital.——Drs. Harold H. Berman, Mary Allen Dillon and George S. Pixley were recently appointed assistant physicians at the St. Lawrence State Hospital.——Dr. Michael Bruck has been appointed assistant physician at the Manhattan State Hospital.——Dr. Rhoda L. Howard has been appointed assistant physician at the Hudson River State Hospital.——Dr. Harry G. Houze has resigned as assistant physician at the St. Lawrence State Hospital, and accepted a position in the Pennsylvania Tuberculosis Sanitarium, Cresson, Pa.——Dr. Edward A. Rowland has been appointed senior assistant physician at the Kings Park State Hospital.——Dr. John F. Schafmeister, since last May head physician at Sing Sing Prison, has resigned.

New York City

Library News.—Dr. John D. Rushmore recently presented more than 700 medical books to the library of the Medical Society of the County of Kings; Dr. Lewis S. Pilcher presented ninety-five volumes, and Dr. John N. Evans presented the medical books of his father, the late Dr. George A. Evans.

Hospital News.—The Manhattan Eye, Ear and Throat Hospital and the Metropolitan Throat Hospital have merged; the name of the latter will be retained, and the work of the two institutions continued at 210 East Sixty-Fourth Street.——Mayor Walker laid the cornerstone of the new Bronx General Hospital on East One Hundred and Sixty-Eighth Street between Gerard and Walton avenues, July 7.

Decorations Awarded.—An official delegation from the French government awarded decorations, July 1, in recognition of service rendered to France by the Rockefeller Institute for Medical Research in maintaining in New York the War Demonstration Hospital for training surgeons in the technic of the Carrel-Dakin treatment. Among others decorated were Dr. Rufus I. Cole, who received the Gold Cross of the Assistance publique, and Dr. George A. Stewart, the Silver Cross.

Drugless Healers Want Injunction.—Characterizing the new Webb-Loomis Law as [illegible]

Naturopathic Association, 360 West Fifty-Eighth Street, has filed a complaint against the city health commissioner and the police commissioner, seeking an injunction to restrain them from interfering with members of this combination "in their professional business." The complaint alleges that numerous arrests were made recently by the defendants, who charged drugless healers with practicing medicine without a license. The complaint asks also that the Webb-Loomis Act be declared unconstitutional.

Health Demonstration in Congested Area.—The practical work of the Bellevue-Yorkville Health Demonstration started in May with the opening of a toxin-antitoxin clinic for children at the baby health station, 241 East Fortieth Street. Other special projects will follow in this effort to secure the best health for the greatest number of people in this crowded area. The community health council, comprising fifty-six voluntary organizations, and the city department of health are cooperating and the Milbank Memorial Fund is supplementing their resources for at least five years. The area selected for the demonstration is in the most crowded part of Manhattan from East River to Fifth Avenue, and from Fourteenth Street to Sixty-Fourth Street. Every phase, manner and contrast of the city's life can be found in this district.

Commonwealth Fund to Establish Institute of Child Guidance.—The Commonwealth Fund will establish, July 1, 1927, an institute of child guidance (1) for study and research in mental hygiene with special reference to behavior problems; (2) for training psychiatrists and psychologists in practical child guidance work; (3) for field training for students in psychiatric social work at Smith College School for Social Work and at the New York School for Social Work, which institutions will be affiliated with the institute, and (4) to afford clinical facilities for the study and treatment of children presenting problems in mental hygiene. The institute will be under the guidance of a board including, among others, Drs. Frankwood E. Williams, William A. White and C. Floyd Haviland; the director of the institute will be Dr. Lawson G. Lowrey of Cleveland, and there will be a complete staff of psychiatrists, psychologists and psychiatric social workers. The institute will be the outgrowth of experience gained in the five year program of the Commonwealth Fund in the field of prevention of juvenile delinquency, and with its establishment the Bureau of Children's Guidance, operated by the New York School of Social Work, will be discontinued. The National Committee for Mental Hygiene, which will also be affiliated with the institute, will discontinue the operation of demonstration child guidance clinics, when the demonstrations at Cleveland and Philadelphia are completed; it will maintain, however, a field staff to advise community child guidance clinics established as the result of previous demonstrations and to advise colleges and universities that desire to establish departments of mental hygiene. The National Committee on Visiting Teachers will offer a similar consultant service to schools that desire to establish this work, and will offer two demonstrations of visiting teaching in connection with training schools for teachers. The Joint Committee on Methods of Preventing Delinquency will continue its work.

NORTH CAROLINA

University News.—Duke University, Durham, has established a fellowship for research in pernicious anemia, and Dr. Beaumont C. Cornell of Johns Hopkins Hospital, Baltimore, has been appointed to conduct the investigation.

Society News.—Mrs. Benjamin J. Lawrence, Raleigh, was elected president of the Women's Auxiliary of the North Carolina Medical Society, to succeed Mrs. Joseph Howell Way; more than seventy wives of physicians attended the meeting at Wrightsville Beach.——The Haywood County Medical Society was entertained at the country home of Dr. William G. Francis, near Waynesville, July 2.

Licenses Revoked.—The state board of medical examiners revoked the licenses of Dr. Memory F. Boyles, Gastonia, and Dr. Frank V. Taylor, Stanley, at a meeting in Raleigh, June 22. These physicians were convicted in federal court in April, 1925, it is reported, for violating the Harrison Narcotic Law, and for which they have since served sentences in prison at Atlanta. Boyles is said to have gone to California to engage in practice there.

Personal.—Dr. Eugene R. Hardin, Lumberton, was elected president of the North Carolina State Health Officers' Association at the recent annual meeting; Dr. John H. Hamilton, Wilmington, and Dr. Frank M. Register, Raleigh, secretary-treasurer.——Dr. Charles L. Minor, Asheville, recently received the honorary degree of doctor of laws from the University of North Carolina.——Dr. George H. Sumner, High Point, has been elected health officer of Surry County.

OHIO

Personal.—Dr. Benjamin K. Rachford, Cincinnati, received the honorary degree of doctor of laws from the University of Cincinnati College of Medicine, recently.——Dr. Henry W. Bettman was made president-elect of the Cincinnati Academy of Medicine at the recent election, and Dr. Symmes Oliver, secretary.——Dr. Porter J. Crawford, health commissioner of Troy, has been appointed medical director of the public schools of that city.

History of Academy of Medicine.—The Academy of Medicine of Cleveland will move soon from its present location to new quarters in the Allen Memorial Medical Library, Euclid Avenue and Adelbert Road, which have been provided by the Cleveland Medical Library Association. The June bulletin gives a historical summary showing that the present organization is the outgrowth of other medical societies. In 1824, the Nineteenth District Medical Society was organized, and the first medical library authorized in 1826; Cleveland then had a population of 1,300. The Nineteenth District Society was reorganized in 1859 as the Cuyahoga County Medical Society, which was reorganized as the Academy of Medicine of Cleveland in 1867; the pathologic society merged with the academy in 1872, and the name was changed back to the Cuyahoga County Medical Society. The Cleveland Medical Society was organized in 1893, and it had a separate existence until 1902, then merged with the Cuyahoga County Medical Society to form the present Academy of Medicine of Cleveland. Since 1902, no change has taken place in the type of organization except the incorporation of smaller medical organizations, such as the local pediatric society and the local association of industrial physicians. At the June meeting of the academy, Dr. Frank E. Bunts, the first president, gave an address on "Medical Societies of Cleveland—Past and Present"; Dr. Carl A. Hamann, on "Hospitals and Medical Education in Cleveland Over the Past Twenty-Five Years," and Dr. Morris Fishbein, Chicago, editor of The Journal, on "Twenty-Five Years of Medical Progress." The program committee announced that at the October meeting the speaker will be Dr. Thomas McCrae, Philadelphia; at the November meeting, Dr. Lewis Gregory Cole, New York, and at the December meeting, Dr. Richard L. Sutton, Kansas City, Mo.

PENNSYLVANIA

Society News.—At the annual meeting of the Lehigh Valley Medical Association, Mount Pocono, June 29, Dr. William A. Hausman, Jr., Allentown, was elected president, and Dr. Alexander Armstrong, White Haven, secretary. About 200 members and their wives were in attendance. The next meeting will be at Wilkes-Barre in January.

Fellows in Neuropsychiatry.—The University of Pennsylvania Graduate School of Medicine announces the following appointments to fellowships in neuropsychiatry, provided jointly by the Commonwealth Fund of New York and the Graduate School of Medicine for the three year period beginning Oct. 11, 1926, and at stipends of $2,000 to $2,200 per annum:

Dr. William G. Ferguson, Ann Arbor, Mich.
Dr. Albert L. Jenkins, Indianapolis.
Dr. Norvelle C. LaMar, Indianapolis.
Dr. Raymond W. Waggoner, Philadelphia.

Philadelphia

Personal.—Edgar Fahs Smith, LL.D., former provost of the University of Pennsylvania, will be awarded the Priestley Medal of the American Chemical Society at the golden jubilee meeting, September 7. This medal was established in honor of Joseph Priestley, the discoverer of oxygen. Dr. Smith, who is now past 70 years of age, devised methods of analysis by means of electricity which have become standard.——Dr. Thomas B. Holloway, professor of ophthalmology, University of Pennsylvania School of Medicine, received the honorary degree of doctor of science from Lafayette College, June 7.——Dr. Basil R. Beltran has been appointed chief surgeon at St. Mary's Hospital, to succeed Dr. William Steele.——Dr. Luther C. Peter received the honorary degree of Sc.D. from Gettysburg College, June 9, and Dr. Arthur C. Morgan, the degree of doctor of science from Susquehanna University.——Dr. Herbert M. Goddard has been appointed on the staff of the Shriners' Hospital for Crippled Children in Philadelphia.

TEXAS

Hospital News.—The first unit of the emergency hospital, Houston, was to have been completed, June 15.——The American Legion Memorial Hospital at Kerrville has been sold to the Veterans' Bureau by the state of Texas.

Society News.—Dr. Earl D. Crutchfield, Galveston, has been elected president of the Texas Radiological Society; Dr. Richard E. Barr, Orange, is president-elect, and Dr. Davis Spangler, Dallas, secretary-treasurer.——Mrs. Evarts V. DePew, San Antonio, has been elected president of the Woman's Auxiliary of the Texas Medical Association, and Mrs. Henry B. Trigg, Fort Worth, president-elect.

Chiropractors in Court.—C. C. Lemly, a chiropractor of Waco, was convicted in county court, June 12, it is reported, on a charge of unlawfully practicing medicine, and sentenced to pay a fine of $50 and serve one minute in jail.——W. L. Johnson, chiropractor of Greenville, was held in contempt of court by Judge Phillips for violating an injunction restraining him from "practicing medicine without a license"; Johnson was enjoined from practicing medicine without a license two years ago, and the present action of the court was taken on appeal.

GENERAL

American Board of Otolaryngology.—The next examination given by this board will be in Denver at the University Hospital, September 13. Application should be made to the secretary, Dr. Hanau W. Loeb, 1402 South Grand Boulevard, St. Louis.

Automobile Fatalities.—The department of commerce announces that seventy-eight large cities in the United States reported a total of 549 automobile fatalities for the four weeks ending June 19, as contrasted with 493 fatalities for the corresponding period of last year. Six of the cities, however, showed no automobile fatalities for this period, and the same number showed none for the corresponding period last year.

Record Milk Consumption.—The U. S. Department of Agriculture announces that milk consumption in the United States reached the highest point in the nation's history last year, the per capita consumption of milk and cream for the country as a whole being estimated at 1.2 pints a day, and the quantity consumed in fluid at 54,326,000,000 pounds, an increase of more than 1,500,000,000 pounds over 1924. These figures are based on surveys and reports from boards of health in 450 cities having a total population of more than 39,000,000.

Society of Tropical Medicine.—The American Society of Tropical Medicine held its twenty-second annual meeting, May 30, at the Army Medical Museum, Washington, D. C., under the presidency of Dr. Joseph F. Siler, U. S. Army; among the speakers were Drs. Frank Smithies, Chicago, Hideyo Noguchi, New York, George C. Shattuck, Boston, Thomas H. T. Wight, Veterans' Bureau, Palo Alto, Calif.; Richard P. Strong, Boston; Charles F. Craig, U. S. Army; Afranio do Amaral, São Paulo, Brazil; James B. Guthrie, New Orleans; Louis F. Bishopp, New York, and Solon Núñez, San Jose, Costa Rica. Dr. George C. Shattuck, Harvard University Medical School, was elected president; Drs. Charles S. Butler, U. S. Navy, and William E. Deeks, United Fruit Company, vice presidents; Dr. Benjamin Schwartz, Bureau of Animal Industry, Washington, D. C., secretary-treasurer, and Dr. Charles F. Craig, U. S. Army, senior editor of the *American Journal of Tropical Medicine.*

Inspection of Imported Food.—The U. S. Department of Agriculture inspects and releases food imported from other countries in accordance with the federal Food and Drugs Act, and importers of food are required to post bonds sufficiently large to guarantee the purity of foods they import. Occasionally, importers violate the terms of these bonds and pass on to the people food that has been condemned. During May, an importer was fined $7,219 for violating his bonds in connection with the importation of anchovies, tomato paste and vinegar; fines imposed on other importers, during May, who violated their bonds brought the total fines up to $11,249. The Department of Agriculture has issued a warning that the privilege of bonded entry may be withdrawn if violations are frequent or deliberate, but that such action will be a last resort in the effort to protect the public.

Progress of Work on Trachoma.—In the government's campaign to eradicate trachoma from the American Indians, a total of 136,551 Indians had been examined up to July 3, the Interior Department announces. Plans provide for the examination of all the 225,000 Indians under federal guardianship. Such progress has been made by the Indian Medical Service and specialists cooperating with the Indian Bureau that only about 88,500 Indians remain to be examined. Of the Indians already examined, 27,943 were found to be suffering with trachoma. Eye operations were performed on 8,457 of them, and about 19,400 were given treatment, operations being deemed unnecessary. These figures do not include examinations and operations performed by agency and school physicians last year, when special attention was given to trachoma among Indian children. The trachoma campaign commenced in the Southwest when three traveling units visited the Indian reservations, holding clinics and performing trachoma operations. Later five demonstrative clinics for the instruction of physicians and nurses in the Indian Medical Service were held, the leading trachoma specialists of the country volunteering their services. The campaign was then extended to all reservations and agencies throughout the United States.

New Regulations Concerning Medicinal Spirits.—Prior to his departure for Europe, Assistant Secretary of the Treasury Lincoln C. Andrews, in charge of prohibition enforcement, announced the promulgation of three new orders which are designed to assist in the enforcement of prohibition. One of the rulings provides for the use of gasoline as a part of the formula of denatured alcohol. Another order compels the return to the prohibition administrators of all filled prescriptions for the sale of medicinal alcohol, whisky and wines. This rule, it is stated, would eliminate what is known as "washing" the prescriptions and their improper use a second or third time. The third new regulation requires that all local transportation of medicinal spirits from bonded warehouses and distillers' agents to wholesale and retail druggists and from wholesale druggists to retail druggists must be by a railway express company or by a bonded commercial express company performing general transportation service in connection with rail or boat carriers. Administrators should approve railroad or boat transportation only for long hauls. General Andrews believes this will tighten the government's supervision over the movement of all alcoholic commodity. The new orders, he said, are meant to prevent the diversion of medicinal spirits to the bootleg industry, where they are largely used as flavoring for the impure liquors manufactured from alcohol and put out under various labels.

Bills That Failed.—Among the bills before Congress that failed to pass was the one to extend for an additional two years the provisions of the Sheppard-Towner Law. The five year period for which this law was originally passed will expire by limitation, June 30, 1927. The House passed a bill to extend this period for two years expiring June 30, 1929, but the Senate Committee on Education and Labor reported the bill with recommendation that the extension be for one year only. Numerous efforts were made in the closing days of Congress to pass the bill in the Senate; but all efforts failed, and unless the Senate passes the bill in the short session beginning in December and ending March 4, the Sheppard-Towner Law will expire, June 30, 1927. Another measure that failed was the Treasury Department bill "to strengthen the Harrison Narcotic Act." This bill was opposed by the medical profession generally on the ground that it was unreasonable. It was opposed also by druggists because it required druggists to attempt to learn whether or not a prescription signed by a physician "was issued in the course of professional practice only." The bill was permitted to remain in committee as a result of testimony presented by the National Retail Druggists Association, by wholesale drug manufacturers and by the American Medical Association. The so-called Federal Lye Bill passed the Senate, April 2, and was favorably reported to the House of Representatives by Congressman Nelsen from the Committee on Interstate and Foreign Commerce, June 17. The bill, however, failed to be passed by the House.

Speakers for Cancer Symposium.—The American Society for the Control of Cancer will conduct a symposium on cancer, September 20-24, at Lake Mohonk Mountain House, Lake Mohonk, N. Y.; about twenty European cancer specialists have accepted invitations to speak. All the invitations to Americans are being sent out in accordance with lists passed on by a committee, the names of whose members have not been announced. The meeting will be relatively small, owing to the size of the meeting place. The aim will be to crystallize existing knowledge of cancer, and to express in concise language the fundamental ground work of fact and opinion on which the effort being made in this country to control cancer should be continued and extended. Invitations to take part in the symposium have been accepted by the following Europeans:

England:

Sir John Bland-Sutton, president, Royal College of Surgeons, whose subject will be "The Value of Coordinated Effort Among Surgeons, Pathologists and Others in the Control of Cancer."

Dr. W. Sampson Handley, honorary surgeon, Middlesex Hospital: "The Earliest Diagnostic Signs of Cancer Visible to the Patient, to the General Practitioner of Medicine, and Detectable by Investigation at Clinics and Hospitals."

Dr. Archibald Leitch, director, Research Institute of the Cancer Hospital, London: "The Practical Value of Researches into the Contributory Causes of Cancer."

Dr. James A. Murray, director, Imperial Cancer Research Fund: "Some Notable Contributions to the Knowledge of Cancer Which Have Been Developed Through Research."

France:

Dr. Léon Bérard, professor of surgery, University of Lyons: "The Organization and Practical Working of the Centers Against Cancer in France."

Dr. Henri Hartmann, professor of surgery, University of Paris: "The Objects and Methods of the Organized Movement Against Cancer in France."

Prof. T. Marie, director, Anticancer Center of Toulouse: "The Need of Special Institutes for the Investigation and Treatment of Cancer, as Compared with Other Methods of Dealing with Cancer Patients."

Dr. Claude Regaud, director, Pasteur Laboratory of the Radium Institute, Paris: "The Value and Proper Equipment of Institutions for the Treatment of Cancer by Radium and Roentgen Rays."

Prof. Gustave Roussy, director, Laboratory of Pathologic Anatomy, University of Paris: "Research in Relation to Prevention and Treatment."

Germany:

Dr. R. Bierich, director, Institute of Cancer Research in Hamburg: "The Organized Movement for Cancer Control in Germany."

Switzerland:

Dr. Charles DuBois, president, Swiss National League for the Control of Cancer: "The Campaign Against Cancer in Switzerland."

Denmark:

Dr. Johannes Fibiger, director, Pathologic-Anatomic Institute and rector of the University of Copenhagen: "Cancer Control in Scandinavia."

Belgium:

Prof. J. Maisin, director, Cancer Institute of the University of Louvain: "The Organized Movement for the Control of Cancer in Belgium."

Holland:

Prof. H. T. Deelman, director, Institute of Pathology of the University of Groningen: "The Relative Mortality from Cancer Among People of Different Races."

Prof. William M. deVries, president, Netherlands Cancer Institute: "The Prevalence of Cancer as Revealed by Mortality Returns and at Necropsy."

FOREIGN

Typhoid in Tokyo.—A dispatch by way of Honolulu states, it is reported, that there are 3,200 cases of typhoid fever in Tokyo, and that about twenty-five new cases are being reported daily. Recent floods are said to be in part responsible for the outbreak.

Anticancer Centers of France.—There are now seven anticancer centers in or near Paris, and eleven in other cities of France. They are centers for diagnosis, treatment, research and teaching, and are all affiliated more or less with the Fondation Curie at Paris, in charge of Professor Regaud, which encourages investigation in radiotherapy. The late Professor Bergonié initiated this new plan in the fight against malignant disease.

Memorials to Physicians.—A tablet was recently unveiled at the Real Dispensario Antituberculoso, Madrid, in memory of Dr. Marino Ascensio, who had been in charge of this preventorium, and recently succumbed to tuberculosis.——In memory of Dr. Catharine van Tussenbroek, a fund is being collected to promote the study of science by women in the Netherlands. Dr. Cornelia de Lange, Amsterdam, and Dr. M. A. Herwerden, Utrecht, are on the committee in charge of the fund.

Personal.—The *British Medical Journal* states that Dr. Hugh Cabot, professor of surgery in the University of Michigan, has been admitted "as an honorary perpetual student of St. Bartholomew's Medical College, London—an honor conferred only once before (Prof. Harvey Cushing, in 1922)."——Prof. A. Stock, director of the chemistry section of the Kaiser Wilhelm Institute at Berlin, has attracted much attention recently by urging the removal of amalgam fillings from teeth as the possible source of serious poisoning on account of the mercury content, citing his severe personal experience.——Dr. M. Rosenstein is the director of the Jewish hospital at Breslau, which recently celebrated its bicentennial.——The Académie de médecine at Paris has sent a committee consisting of Drs. Teissier, Renault and Brumpt to Montmorillon to fight an epidemic of miliary fever. The public health authorities had appealed for help to the académie.——Prof. A. Cuzzi, Milan, is president of the newly organized Italian Associazione Ultravioletta, which held recently its first meeting at Milan.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 26, 1926.

Sir Henry Morris

Sir Henry Morris, F.R.C.S., has died at the age of 82. He was educated at University College, graduating B.A. at the University of London in 1863 and M.A. in 1870 in logic, moral philosophy and political economy. His medical education was carried out at Guy's Hospital, and he was admitted M.R.C.S., in 1866, and F.R.C.S., in 1873. He served as assistant medical officer and house surgeon at Guy's Hospital. In 1870 he was appointed surgical registrar and superintendent of surgical postmortem examinations at the Middlesex Hospital, and in the following year he was elected assistant surgeon and lecturer on anatomy in the medical school. At the Royal College of Surgeons of England he served on the council from 1893 to 1914. He was president in 1906, 1907 and 1908, delivering the Hunterian Oration in 1909 on John Hunter as a Philosopher. His "System of Anatomy," which first appeared in the eighties, at once became a standard book and has now gone through five editions. Both American and English anatomists have contributed to it. His "Anatomy of the Joints of Man," published in 1878, also became an important textbook and work of reference. Though a general surgeon of the first rank, he specialized a good deal on the genito-urinary organs and was the first in this country to perform the new operation of nephrolithotomy, which he did in 1880. His treatises on "Diseases and Injuries of the Genito-Urinary Organs of the Male" and on "Diseases of the Kidneys and Ureters" were for long leading textbooks. He was a tall man of imposing presence and strong will, fluent in speech, and a keen medical politician who dominated his audiences by the definiteness and forcefulness of his views.

The National Insurance Act

The commendatory views expressed in the recent official report on national health insurance (The Journal, May 22, p. 1646) are not shared by the National Medical Union (the medical organization opposed to the insurance act). It certainly has pointed out one evil by making a protest against the continued payments of fees to panel physicians by people who never consult them but who are compulsorily insured under the national health insurance scheme. Hundreds of thousands of people, it was stated at the annual meeting of the union, are compelled by law to pay fees to panel physicians though they refuse to consult them, preferring to call in their own private physicians. Indignation was expressed by physicians attending this meeting at the indifference of the government, and a resolution dealing with the question was unanimously passed. The resolution "invites the minister of health to examine the subject with a view to giving fair play to such insured persons as do not wish to consult government physicians. The National Medical Union claims to represent the nonpanel element in the medical profession, and to represent 50 per cent of physicians in the country. This last statement cannot be accepted. It is probably based on the fact that about half the physicians of the country are not on the panel. But these comprise not only consultants and all kinds of specialists but also the large number of physicians engaged in whole-time administrative work and those who have retired from practice. None of these could or would engage in panel work, and therefore it cannot be assumed that they are bitterly opposed to the system, as the National Medical Union is. On the other hand, the great majority of general practitioners, who alone are in a position to undertake panel work, have done so. For those whose views the National Medical Union represents, 20 per cent of the profession would be a liberal estimate.

An Echo of the General Strike: Boycott of Hospital Carnival

Resentment against hospitals, aroused in trade unionists by the volunteering of medical students to take the place of strikers, continues. The drivers of lorries to take part in the processions and tableaus of the annual carnival in aid of the Metropolitan Hospital, Kingsland Road, have declined to take the vehicles out, because, as trade unionists, they resent the activities of many medical students in driving vehicles during the general strike. The following statement was issued by the hospital authorities: "A large number of trade unionists who in previous years have assisted our annual carnival have withdrawn their help this year, because, they say, of the fact that medical students took part in the recent industrial trouble. The Carnival Committee feels that this attitude is quite unwarranted, for the services of the hospital must at all times be maintained in the interests of the community at large, and the assistance given by these gentlemen from certain hospitals—of which the Metropolitan was not one—was doubtless the means of relieving considerable suffering, and probably of saving many lives of those chiefly drawn from the working classes."

Sir Frederick Mott

Sir Frederick Mott, K.B.E., M.D., F.R.C.P. Lond., LL.D. Edin., F.R.S., the neurologist, has died at the age of 72 years. Educated at the medical school of University College, he graduated with first class honors in 1881. After graduation he studied pathology at Vienna and in 1884 was appointed lecturer on anatomy and physiology at the Charing Cross Medical School. In 1890 he was appointed assistant physician. His work was of the rigidly scientific order. Beginning with the anatomy and physiology of the nervous system he went on to the pathology and then applied this knowledge in his clinical studies. In conjunction with Schäfer, he contributed important work on cerebral localization and the motor functions of the cerebrum, and later with Sherrington on the sensory cortex, including the well known experiments on the anesthetic limb. Research on the functional activities of the spinal cord followed. He made important contributions to the histology of the nervous system, showing among other things the thalamic connections of the fillet. His appointment as pathologist to the central laboratory of the London County asylums gave him a unique opportunity for the study of the pathology of insanity, which he turned to good account. Krafft-Ebbing had announced the syphilitic origin of general paralysis, but his views received little support in this country until, on the basis of an immense amount of clinical and pathologic evidence obtained in his laboratory, Mott removed all doubt as to the syphilitic origin of the disease. Another subject on which he made important studies was dementia praecox. He showed the widespread bodily changes that take place and brought forward pathologic evidence of a congenital origin of the disease. A study of the immense material furnished by the London Mental Hospital led him to formulate the "law of anticipation" in insane stock, according to which the psychotic factor appears earlier in each succeeding generation. This he regarded as an effort of nature to eliminate the tainted stock, more important than segregation or sterilization, as the period of greatest fertility precedes the development of those symptoms which would bring the person under control. During the war he acted as a neurologic consultant to the army, which led to a study of the war neuroses. He found that in the great majority there was previous nervous instability. This led him to the important conclusion that the strain of war was an effective cause of neurosis only in those of neuropathic disposition. His work on the effects of high explosives on the central nervous system was of the first importance. He was also able to show that "shell shock" cases can be divided into two great classes: a few cases in which there actually has been a shock and in which tiny hemorrhages into the brain substance can be seen; and a large number of cases in which unfit men break down under the stress of war and in which no actual shock has, as a rule, taken place. His publications are many. He contributed a great deal to the general medical journals as well as to those devoted to neurology. He was a kindly and unassuming man, always willing to help other workers in his field. He obtained many honors, of which the greatest was the F.R.S., conferred on him in 1896.

British Seamen Resent American Medical Examination

The National Sailors' and Firemen's Union has issued the following statement: "Great indignation is being expressed in seafaring circles at the latest American medical 'stunt.' It appears that on the arrival of the *Majestic* and *Berengaria* the crews of both ships were subjected to the indignity of an extra medical examination, during which they were compelled partially to strip. All British crews sailing from these islands have to undergo a medical examination at the hands of the board of trade. In the case of federation ships, the physician of the federation also passes the crew. The employment of the crew is contingent on these examinations. In addition, they undergo an examination at the quarantine station in New York when the crew musters for medical inspection." The officers and stewardesses of the *Majestic* to the number of seventy-five were exempted from the examination. "If the medical authorities of the States are afraid that some infectious disease will be imported, why exempt," asks the Union, "any person on board?"

BELGIUM

(From Our Regular Correspondent)

June 11, 1926.

The Antidiphtheria Crusade

Dr. Bessemans, chief inspector of the public health service, has presented to the international bureau of public health a study on the antidiphtheria crusade in Belgium. He discusses the subject under three heads: (1) sanitary equipment and organization; (2) the tactics and the means of defense, and (3) the results of the crusade.

SANITARY ORGANIZATION

Various organizations are called on to take part, as follows: the faculties of medicine and the medical profession, including the laboratories of bacteriology and public health. Other state institutions concerned are the administration of public health, the royal academy of medicine, the provincial medical commissions, the intercommunal institutions and local organizations.

METHODS OF ACTION

Dr. Bessemans discussed also the various methods of action, such as early diagnosis, gratuitous serum and search for bacillus carriers. He pointed out that the Schick test is practical and easily carried out.

RESULTS

In general, the retrogression of diphtheria mortality has been rapid since the introduction of curative serum into general practice, about 1894. A slight recrudescence characterized the two years immediately following the war. The retrogression of diphtheria mortality is due mainly to the crusade against all transmissible affections.

Antidiphtheria Vaccination

Following accidents occurring in foreign countries from antidiphtheria vaccination with toxin-antitoxin mixture, the minister of public health stated that in Belgium immunization by toxin-antitoxin was generally given up long before the events cited. Physicians use at present anatoxin. The results thus far have been remarkably good.

Twenty-First Congress of the Association of Anatomists

The twenty-first Congress of the Association of Anatomists has been held in Liége under the presidency of Professor Julin. A number of communications were presented dealing especially with the Golgi apparatus.

Infantile Paralysis

Before the Belgian Orthopedic Society, Dr. Lorthioir presented a paper on the treatment of infantile paralysis based on 152 recent cases of the disease in Belgium. There seems to be a recrudescence of the affection. The disease is only slightly contagious, but transmission through the saliva is almost certain. The virus of poliomyelitis belongs to the group of filtrable viruses. In Belgium the incidence in boys is a little higher than in girls. The author stated that serotherapy had given some encouraging results.

Cholecystography

Addressing the Belgian Radiologic Society recently, Boine stated that cholecystography through the injection of substances impervious to roentgen rays is certain to be generally accepted, since it imposes no risk on the subject even in avowed cardiac and icteric patients. Furthermore, in office practice the examination is quite feasible. The ingestion method is an uncertain procedure. A normal gallbladder becomes visible about five hours after the injection but presents clearer outlines after from ten to twelve hours. A bladder that is invisible after from ten to twelve hours may be regarded as pathologic.

The Art Exhibit of Physicians

On the occasion of the Journées médicales to be held in Brussels, in 1926, there will be, as usual, an exhibit having to do with the applied arts and sciences of medicine, surgery, pharmacy and public health. For the first time, the exhibitors will receive awards. The exhibit will consist of five sections. The fourth section, which will be confined to the productions of artist-physicians, will take the place, this year, of the *"salon des médecins"* of previous years.

Visceral Sensibility

Before the Royal Academy of Medicine of Belgium, Lemaire has presented a communication on the mode of perception of visceral pain. He has observed that superficial parietal anesthesia will suppress deep pains. This anesthesia cannot be produced except through the modification of nerve conduction in the corresponding peripheral neuron. Another point in his experiments is the suppression of pains after superficial or deep anesthesia of the wall. These points are still considered (but wrongly, it would seem) as visceral points, whereas they are in reality parietal points. We should conceive of them as reenforced points of Head's zones of hyperalgesia. Another equally remarkable item is the muscular relaxation after superficial anesthesias. Following the presentation of the paper, De Beule gave the results of his clinical experience in visceral surgery after local anesthesia. He believes that the beginning of traction on the viscera is very painful and that the pain caused by such traction subsides progressively as if it were assuaged, according as the traction is prolonged. If the operator handles the organ very gently, it is possible to avoid provoking pain, even though one is pulling quite strongly on its point of attachment.

NETHERLANDS

(From Our Regular Correspondent)

June 11, 1925.

Frambesia in the Dutch East Indies

Before the Nederlandsche Vereeniging voor tropische Geneeskunde, Winckel has presented a communication on the crusade in the Dutch East Indies against tropical frambesia. Arsphenamine revolutionized the treatment of frambesia and has had a marked influence on the native population. The crusade was begun in 1919 by means of a publicity campaign. As soon as the native population learned that a single injection caused remission of symptoms, large numbers of patients requested treatment. A little later, a good share of the population was willing to pay for the drug, and gratuitous treatment was reserved for the poor. By the end of 1924, 1,600,000 injections had been made. Frambesia has been practically eradicated from Java, and before long it will have retrogressed to a great extent in the remaining islands of the archipelago.

A Prize Contest in Surgery

On the occasion of the twenty-fifth anniversary of the foundation of the Netherlands Society of Surgery, to be celebrated, in 1927, the society will institute a prize contest open to physicians of the Netherlands. The following topics have been chosen as subjects for the prize essay: (1) an experimental and clinical study on the influence of alimentation in the healing of fractures, and (2) an experimental and clinical study on bone atrophy.

School Physicians

A commission was appointed, some time ago, to study the organization of school medicine; more particularly, in the rural districts. The commission advises the appointment of physicians whose activities shall be confined to school inspection. A school physician should not have the oversight of more than 6,000 pupils, and should be able to reach rapidly any part of the region assigned to him.

Attendance at the Medical Schools of the Netherlands

In the *Nederlandsch Tijdschrift voor Geneeskunde,* Dr. Droogleever Fortuyn publishes tables showing the number of students enrolled in medicine and those graduated each year, during the past quarter century. The number enrolled was 7,134, of whom 527 were women. Of that number, 4,201, of whom 239 were women, secured their diplomas in medicine. During the period from 1900 to 1905, the annual increase in the number of students averaged 191, while for the period 1920 to 1925 the annual increase was 405. A comparison of the figures shows that, for every increase in the population of 500, one more member has been added to the medical profession.

Commission on Tumors

The Netherlands Institute for Cancer Research has created a commission on tumors composed of four physicians. The object of the commission is to offer physicians the advantages of free consultation with respect to difficult cases of neoplasms, from the point of view of pathology. It will also collect detailed reports of all rare cases.

Raw Milk Versus Pasteurized Milk

Mr. Van Leersum has made a study on the vitamin C content of raw and of pasteurized milk. The capacity of milk to absorb oxygen influences greatly the content of vitamin C. He concludes that milk which is widely exposed to the air loses a large proportion of its vitamin C and probably also of its vitamin A. When, in addition, the milk is subjected to pasteurization, there is further loss; but the pasteurization in itself is not the cause for the destruction of vitamins. Vitamin C (although not at all stable) endures high temperatures in the absence of oxygen. It has been said that it is better to boil the milk than to pasteurize it, for boiling dispels the oxygen. In any event, it is well to obtain milk as fresh as possible, and before shaking has brought it into contact with the air. The use of mechanical devices for milking is, therefore, much to be recommended. Milk containers, for similar reasons, should be filled to the brim. Delivery should be as direct and as rapid as possible.

Congress on "Safety First"

Under the chairmanship of Dr. Josephus Zitta, a congress on "safety first" has been held in Amsterdam, which dealt more particularly with the safety of workmen in the industries, in agriculture and in all groupings of persons. The question of safety in connection with artificial illumination and heating was also brought up; likewise the question of safety in the matter of education.

VIENNA

(From Our Regular Correspondent)

June 12, 1926.

The Visit of American Physicians in Vienna

A considerable number of physicians from the United States, under the conduct of Dr. Wilson, recently visited Vienna. Eminent representatives of the faculty took part in the special lectures: Professors Wenckebach, Eiselsberg, Neumann, Hajek, Meller and Fuchs. The plan of resuming the exchange of professors between Austria and the United States, as was done before the war, was discussed. The desirability was emphasized of coroners in America receiving special training for their work as their colleagues do in Europe.

In Vienna the Americans showed great interest in the low-priced, yet comfortable and hygienic apartment houses, containing 25,000 dwellings, erected by the municipal authorities. Also the institutions for the care of persons with mental affections awakened the admiration of our guests. In the Institute for Neurology and Psychology, Professor Wagner-Jauregg delivered an address on his treatment of general paralysis by inoculation with malaria. He stated that it is sometimes necessary to provoke as many as ten attacks of malaria before a permanent result can be secured. More than 180 physicians studying in Vienna are enrolled in the American Medical Association of Vienna.

The Most Frequent Errors in the Diagnoses of Daily Practice

The association of Styrian physicians (Styria, an Austrian province) held recently a "Seminar-Abend," at which the main subject was "Wrong Diagnoses." Dr. Ninaus considered as his topic functional nervous disturbance, which often conceals an organic affection; he discussed also "rheumatism," the symptoms of which are often elicited by a tumor of the spinal column or of the thorax. Dr. Beitzke pointed out that in tumors of the air passages a diagnosis of tuberculosis or of chronic bronchitis is often rendered. Metastases of such tumors on the surface of the body are regarded as "sarcomas." Carcinoma of the rectum is usually taken for enteritis or hemorrhoids. Tuberculous affections in persons of advanced age are often wrongly diagnosed. Miliary tuberculosis has frequently been confounded with meningitis, pyemia or typhoid. Suppurative osteomyelitis is commonly taken for "rheumatism." Polypous malignant endocarditis is seldom recognized at the start; even large pleural exudates have often been overlooked. If brain symptoms are obscure and the Wassermann test is positive, "cerebrospinal syphilis" may be diagnosed, when a brain tumor is the main factor. In laryngology, there is danger of confusing cancer of the larynx with chronic laryngitis. Dr. Zange emphasized that one should not observe such cases longer than six weeks without having a specialist examine the patient. Secondary and tertiary symptoms are unfortunately often taken for angina or peritonsillar abscess. In the presence of gumma of the mouth, the trismus found in peritonsillitis is lacking. Rapid disintegration occurs in gummas and neoplasms. In otology, it is important not to mistake otogenic meningitis for typhoid or miliary tuberculosis, or for some other form of meningitis, since the differentiation is extremely difficult. Otogenic sinus thrombosis may be diagnosed as a sequel of influenza.

Professor Hamburger discussed possible errors in connection with convulsions in children. In the presence of an incipient meningitis, the diagnosis reached is often "angina" or "difficult dentition" or "gastro-intestinal disturbances." In children, albuminuria is sometimes merely orthostatic albuminuria, which is quite harmless.

Dr. Pfab discussed errors of diagnosis in fractures. Most frequent in this class is the failure to diagnose fracture of the neck of the femur. Hematomas often simulate vertebral fractures, and even a roentgenogram does not always make possible the correct diagnosis. For impacted fracture of the humerus (which is commonly overlooked) a valuable diagnostic aid is the hematoma that develops within twelve hours, at the most. In head injuries, blood from without may flow into the nose and ear, or the tympanum may be lacerated, while the base of the cranium remains unharmed. Often, in injuries of the limbs and joints, a strain or a luxation is diagnosed, whereas in reality there is a fracture. Only the roentgenologic examination will clear up the situation, after a few days. In any event, immobilization of the joint for a short time will be advantageous.

Increase of Rabies in Vienna

Rabies has been diagnosed in twelve dogs of the city within a short time. Thus far the epidemic appears to be confined to the left bank of the Danube. All the dogs of the city are required at present to wear a muzzle, and on the left bank of the Danube dogs on the streets must be leashed; also any transfer of dogs to new permanent quarters must be announced to the board of health. During the first five months of the year, fourteen cases of injuries due to mad dogs were reported in Vienna. This is far above the average of previous years.

The Economic Situation of the Medical Profession in Vienna

In an article in the *Medicinische und Pharmaceutische Rundschau*, a physician takes a very pessimistic view of the situation of the medical profession in Vienna at present. The number of medical students is around 9,000. Of that number, about 1,000 are graduated each year, of whom about 700 remain in Vienna. Since, at present, there are 3,800 physicians in Vienna, in five years the number will be doubled, and that in the face of a constantly diminishing population. As the population numbers 1,800,000, there will be a physician to each 450 inhabitants. Then again, 1,420,000 inhabitants are insured. Thus, only one fourth of the total population remains as the source of private patients, so that the insurance organizations *(Krankenkassen)* constitute for the medical profession the most important source of income. The remuneration paid *Krankenkassen* physicians is, however, small—on an average, 300 Austrian shillings ($42.75) per month—so that only by serving three or four different *Krankenkassen* can a physician eke out a living. There is no possibility for a newly graduated physician to secure a fixed salary. Only after he has served for from one to two years as a volunteer in a hospital can he hope to become an assistant physician in a hospital, with a compensation amounting to from 200 to 300 shillings ($28.50 to $42.75) monthly, which post he cannot, however, retain longer than four years. It is no wonder that suicide and instances of change of calling are of daily occurrence among members of the medical profession. In addition to the difficulties that are inherent in the medical profession, the general economic depression that still prevails enters into the problem.

The Accident Hospital Established in Vienna

In many industrial accidents, the losses (cost of treatment and loss of time) could be reduced to one tenth of the former expenditures by providing prompt and adequate aid. On the basis of such findings, the *Unfallspital*, or accident hospital, was founded a year ago and, as the result of its activities, in addition to the lessening of the physical suffering of the workmen, a reduction in the expenditures of the *Krankenkassen* amounting to $94,000 has been effected.

BERLIN

(From Our Regular Correspondent)

June 5, 1926.

The Fiftieth Anniversary of the German Surgical Society

In continuation of my report on the proceedings of the Deutsche Gesellschaft für Chirurgie, the fiftieth anniversary of which was celebrated in Berlin, April 7-10 (The Journal, June 19, p. 1926): Professor Nordmann of Berlin discussed the developments in surgery of the large intestine, during the past quarter century. The roentgen rays will often reveal severe injuries while the clinical picture still points to a harmless affection. Roentgenologic examination has corroborated what had already been discovered by clinical observations; namely, that in the intestine there is not only a normal peristaltic but also an antiperistaltic movement; furthermore, that the content of the large intestine does not pass through newly created anastomoses but that the physiologic peristalsis effects the onward movement of the fecal contents along the accustomed lanes. Anastomosis, therefore, is indicated only in the presence of an impermeable stenosis. Total or partial atresias and congenital stenoses, which were formerly supposed to have been brought about by a fetal peritonitis, are, according to Kreuter, malformations caused by arrested development. Operative intervention should be as simple as possible (construction of an intestinal fistula centrad from the atresia—or from the stenosis, as the case may be). An abnormal dilatation of the cecum, and unusually marked mobility are of such common occurrence that they can scarcely be regarded as pathologic. Torsion of the cecum, however, should receive operative treatment as soon as possible; if the intestine is vitally sound, it will suffice to untwist it and to fasten it in normal position. If gangrene is present, it must be resected along with the ascending colon. Jackson's membrane, the ligamenta varioformia and the double course of the flexura lienalis are due to disturbances in development during the embryonal stage. They require surgical intervention only when it can be indubitably demonstrated roentgenologically that there is no passage through them or that intestinal occlusion has been set up by them (which is very rare). An urgent warning against operative treatment for this symptom complex—for example, resection of the ascending colon—on the basis of uncertain indications, must be uttered. Megacolon is a congenital affection, often associated with an enlargement of the urinary bladder. It does not usually cause pronounced manifestations of disease unless a kinking and a valve closure in the efferent loop have resulted. The surgical treatment will depend on the general condition, age of the patient and the observations. The first thing is to get an evacuation of the megacolon. If enemas do not accomplish this result, cecostomy is to be preferred to an anus praeternaturalis in the megacolon. In uncomplicated cases, if the general condition of the patient is fairly good, following adequate evacuation of the loop, one-stage resection is the method of choice. In young children, in much weakened patients, in volvulus of the flexure and when the megacolon is overloaded, resection in two or more stages is to be preferred. Of the inflammatory affections of the large intestine, diverticulitis is more frequent than has been commonly assumed (appendicitis sinistra). Roentgenologic diagnosis of the condition is possible. Not infrequently there is a rupture of the diverticulum into the bladder, in which cases differential diagnosis as against carcinoma is difficult, even with the aid of the roentgenogram. In uncomplicated cases, one-stage resection, and in complicated cases, anus praeternaturalis is indicated. The hitherto poor prognosis can be improved only by early diagnosis. Isolated ulcers of the colon are rare and are seldom recognized until perforation peritonitis has resulted. The sequel of a colic ulcer may be a phlegmon of the intestinal wall, the best therapy for which is (if right-sided) a one-stage resection and, if left-sided, resection in two or more stages. Postoperative neurotrophic colitis (especially after gastro-enterostomies) with copious diarrheas is caused chiefly by lack of hydrochloric acid in the stomach and should be combated by administration of hydrochloric acid by mouth. The kind of operative intervention that should be resorted to in chronic colitis, when dietetic measures have failed, depends on the degree and the severity of the affection. Better than appendicostomy is the construction of a Witzel diagonal fistula in the cecum, from which irrigations are carried out, and if the rectum also is involved, an anus praeternaturalis is indicated for the separate treatment of the two portions of the intestine. If the rectum is sound, in very severe cases the implantation of the lowest loop of the ileum in the flexure and the extirpation of the whole colon may be considered. Treatment of pathologic fat deposits of the large intestine consists in their resection, and transverse invagination of the lumen of the intestine at this point. Of the various tumors, the speaker referred first to the inflammatory pseudotumors, which are difficult to differentiate from the malignant tumors and should therefore be treated on the same basis as malignant tumors. Polypi, lipomas and similar benign tumors do not usually receive treatment until they have caused invagination. In all symptoms of an inactive bowel and also in diarrheas, the possibility of carcinoma of the colon should be kept in mind. A roentgen-ray examination should be made at the earliest opportunity. Negative blood determinations in the stool are not conclusive evidence of the absence of carcinoma. Carcinomas of the colon may remain stationary for years and seldom result in glandular metastases, and therefore operative surgery is often effective. In uncomplicated cases, one-stage resection is the method of choice. In carcinoma of the cecum, the ascending colon and the hepatic flexure, the whole colon should always be removed and an anastomosis made between the lowest loop of the ileum and the transverse colon. In carcinoma of the flexure, a large portion of the large intestine should be resected. In complicated cases, in ileus and in much weakened patients, a cecostomy or an anus praeternaturalis is indicated. At a second sitting, resection will follow, and at a third sitting, closure of the anus praeternaturalis. Two-stage resection is seldom indicated, and then only in the region of the left side of the body, and only in very corpulent persons.

Should Food Be Thoroughly Cooked?

Prof. Dr. Friedberger, hygienist at the University of Greifswald, who was given a year's leave of absence to spend in Berlin, found himself under the necessity of taking his dinners in restaurants. His work being of an irregular character, he sometimes dined shortly after 12 noon, and at other times between 4 and 5 p. m. He then observed that when he dined late in the afternoon a feeling of satiety was soon apparent, and although he sat down with a bigger appetite and larger portions were served him than at noon, he found that the meal did not last so long as at noon. As he had no opportunity of instituting metabolism experiments on himself, he experimented with growing and with adult rats, which may be counted on as reacting in an excellent manner to foods of various quality.

To rats 14 days old, which belonged to the same litter, were of equal size, and which were kept in separate cages under the same hygienic conditions, he gave first freshly cooked restaurant food and then again, later, similar food that had cooked four hours. The quantity of food and the caloric value were the same in each instance. After ten days, he found that the rat that had been given the freshly cooked food had reached a weight of 50 Gm., whereas the rat that had received the food which had been cooked for four hours weighed only 36 Gm. After sixty days, the former weighed 448 Gm. and the latter, 190 Gm. The first rat had doubled its weight at the end of fourteen days, the second rat only after thirty-one days. The first rat had trebled in weight at the end of twenty-seven days, whereas the second rat, subsisting on the overcooked food, had not trebled its weight at the end of seventy days.

The difference is even more striking when the relative quantity of food consumed is considered. Whereas the first rat did not eat all of the 30 Gm. of food and yet increased more rapidly in weight, the rat to which the overcooked food was served ate it all and yet increased less in weight. Still greater differences were noted when the rats were given raw food, which was utilized to greater advantage than the normally cooked food. Also in adult rats a distinct difference was observed. Whereas the rats that received the freshly cooked food increased in weight, the rats to which the overcooked food was given lost weight. Similar results were secured when canned food was served.

That the poorer utilization of the food was not due to the loss of vitamins is shown by the fact that the ingestion of additional food rich in vitamins caused no change. By overcooking, in any event, a partial destruction of food values is brought about, which constitutes a direct waste of provisions, for in private households the same evil is sometimes encountered as in restaurants, when the individual members of the household come for their meals at different times.

The advocates of an exclusive raw food diet maintain that they require less food than those who subsist on cooked food. There is a certain measure of truth in their assertions, in which connection it will be recalled that Englishmen eat their meat and vegetables in an undercooked condition, and the same is true of the French and the Italians, with regard to vegetables at least. Perhaps that is the reason that those nations eat less than we and the Russians do—because our food is cooked much longer than theirs.

Marriages

Elwood H. Macpherson, Milburn, N. J., to Miss Rose F. Sulmonetti of Portland, Maine, June 24.

Zoltan Glatter, Dixon, Ill., to Miss Magda Fejer of Hungary, at New York, June 25.

Frank Elwood Stiles to Miss Mary Josephine Emerson, both of Denver, June 30.

David Lloyd Williams to Miss Winifred Short, both of Rutland, Mass., May 22.

Paul Risley Adams to Miss Mary Loughlin, both of Akron, Ohio, June 18.

Deaths

Theodore William Simon, Central Islip, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1900; member of the Medical Society of the State of New York; senior assistant physician to the Central Islip State Hospital; member of the American Psychiatric Association; aged 50; died suddenly, April 25, of chronic myocarditis.

Eliza H. Root, Sycamore, Ill.; Northwestern University Woman's Medical School, Chicago, 1882; member of the Illinois State Medical Society; formerly on the faculty of her alma mater; at one time on the staffs of the Women and Children's Hospital and the Wesley Memorial Hospital, Chicago; aged 80; died, June 12, of carcinoma.

James J. Neely, Memphis, Tenn.; Bellevue Hospital Medical College, New York, 1872; member of the American Psychiatric Association; Confederate veteran; at one time member of the board of health; formerly superintendent of the Western State Hospital, Bolivar; aged 76; died, May 6, at the Baptist Hospital.

Mary Wilhelmina Turnbull Murphy, San Francisco; Cooper Medical College, San Francisco, 1903; member of the California Medical Association; and the Associated Anesthetists of the United States and Canada; aged 50; died, June 17, at the Children's Hospital, of chronic pancreatitis and arteriosclerosis.

John B. Schwatka, Baltimore; University of Maryland School of Medicine, Baltimore, 1882; Baltimore Medical College, 1886; member of the Medical and Chirurgical Faculty of Maryland; formerly on the faculty of the Maryland Medical College; aged 65; died, June 14, of psoas abscess and arteriosclerosis.

Henry Ingersoll Bowditch ⊕ Boston; Medical School of Harvard University, Boston, 1902; member of the American Pediatric Society and the New England Pediatric Society; for nineteen years on the staff of the Boston Floating Hospital; aged 52; died in June, following an operation for brain tumor.

Benjamin F. Dudding, Hope, Ind.; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1906; also a druggist; aged 45; died, June 9, at a hospital in Columbus, of injuries received when the automobile in which he was driving was struck by a train.

William Rhame, Freeport, N. Y.; Medical Department of Columbia College, New York, 1876; member of the Medical Society of the State of New York; for twenty-five years health officer of the town of Hempstead; aged 71; died, June 14, of carcinoma of the mediastinum.

Edward Munson, Medina, N. Y.; Medical Department of Columbia College, New York, 1881; member of the Medical Society of the State of New York; for thirty years county coroner; aged 67; died, June 15, at the Medina Memorial Hospital, following a nephrectomy.

Thomas H. E. Bell ⊕ Reading, Mich.; Michigan College of Medicine and Surgery, Detroit, 1897; past president of the Hillsdale County Medical Society; served during the World War; aged 52; died, June 7, at the Hillsdale (Mich.) Hospital, of cerebral hemorrhage.

William Howard Montgomery, Willard, N. Y.; Syracuse University College of Medicine, 1900; member of the Medical Society of the State of New York; for many years on the staff of the Willard State Hospital, where he died, March 29, of cerebral hemorrhage, aged 48.

John Bennett Kain, York, Pa.; Jefferson Medical College of Philadelphia, 1871; member of the Medical Society of the State of Pennsylvania; formerly member of the state legislature and city council; aged 76; died, May 3, of uremia and chronic interstitial nephritis.

John B. Westerfield, Clovis, N. M.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1903; member of the New Mexico Medical Society; aged 52; died, June 5, at Marlin, Texas, of acute nephritis.

James L. Atkinson, Poplar, Mont.; Missouri Medical College, St. Louis, 1879; member of the Medical Association of Montana; formerly connected with the Fort Peck Indian School Hospital; aged 70; died, May 20, of arteriosclerosis.

Samuel Henry Huntington ⊕ Norwalk, Conn.; Yale University School of Medicine, New Haven, 1876; for many years medical examiner of Norwalk; on the staff of the Norwalk Hospital; aged 72; died, June 23, of heart disease.

Ambrose Peffer, Newville, Pa.; Jefferson Medical College of Philadelphia, 1887; member of the Medical Society of the State of Pennsylvania; county coroner; aged 62; died, May 23, at the Carlisle (Pa.) Hospital, of angina pectoris.

James Minor Maghee ⊕ West Orange, N. J.; Medical Department of Columbia College, New York, 1887; for twenty-five years on the staff of the Orange (N. J.) Memorial Hospital; aged 61; died, June 22, of sepsis.

Charles H. Dunn, Cherry, Ill.; Chicago College of Medicine and Surgery, 1909; aged 52; died, June 21, at St. Margaret's Hospital, Spring Valley, of streptococcic septicemia, following an abrasion of the upper lip.

Gilbert T. Haugen, Fergus Falls, Minn.; University of Minnesota Medical School, Minneapolis, 1905; member of the Minnesota State Medical Association; aged 46; died, March 30, of typhoid fever and pneumonia.

Emil H. Henckler, St. Louis, St. Louis University School of Medicine, 1900; member of the Missouri State Medical Association; aged 50; died, April 30, at the Mullanphy Hospital, of acute hepatitis and cholecystitis.

Louis Lee Nichols, Brooklyn; Long Island College Hospital, Brooklyn, 1890; member of the Medical Society of the State of New York; aged 67; died, June 17, at the Brooklyn Hospital, of appendicitis.

Orville Othello Moore ⊕ Effingham, Kan.; Kansas Medical College, Topeka, 1906; served during the World War; formerly on the staff of St. Francis Hospital, Topeka; aged 44; died, April 28, of angina pectoris.

Adjutor Couturier, Westbrook, Maine; Laval University Faculty of Medicine, Quebec, Que., Canada, 1887; member of the Maine Medical Association; city physician; aged 62; died, March 31, of heart disease.

Charles B. Powell, Hartford, Ala.; University of Alabama School of Medicine, Tuscaloosa, 1900; member of the Medical Association of the State of Alabama; aged 53; died, May 12, following a long illness.

Clifton Dalton Ellis, Cleveland; Cleveland University of Medicine and Surgery, 1883; formerly on the staffs of the Cleveland City, and Lakeside hospitals; aged 65; died, June 26, of pernicious anemia.

Samuel W. Sholars, Orange, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1872; Confederate veteran; county health officer; aged 79; died, May 13, of acute nephritis.

Frank Gorham, Westport, Conn.; Yale University School of Medicine, New Haven, 1876; member of the Connecticut State Medical Society; aged 73; died, June 4, of chronic myocarditis and nephritis.

Gustav Julius Bergener ⊕ San Francisco; Medical College of Indiana, Indianapolis, 1896; formerly a practitioner in Chicago; aged 59; died, May 28, at his home in Los Altos, Calif., of angina pectoris.

Jacob Snyder Shields, Oraibi, Ariz.; Medical College of Indiana, Indianapolis, 1894; physician to the Hopi Agency, Indian Service; aged 60; died, June 4, at Winslow, of pulmonary tuberculosis.

Daniel Cameron Warren, Union Church, Miss.; Medical Department University of Louisville, 1876; member of the Mississippi State Medical Association; aged 75; died, May 29, of mitral regurgitation.

Creed Winston Childs, Washington, D. C.; Howard University School of Medicine, Washington, 1893; formerly member of the board of education; aged 62; died, May 24, of uremia and nephritis.

Leroy W. Braden, Tenmile, Pa.; Jefferson Medical College of Philadelphia, 1880; member of the Medical Society of the State of Pennsylvania; aged 72; died suddenly, June 4, of cerebral hemorrhage.

James Herbert Barnard ⊕ Whitehall, Mich.; Grand Rapids Medical College, 1899; aged 62; died, June 15, at the Mercy Hospital, of acute dilatation of the heart, following an operation for cholecystitis.

William Berry Lewis, Long Beach, Calif.; University of Illinois College of Medicine, Chicago, 1910; aged 43; died, March 31, at the Stanford Hospital, San Francisco, of chronic glomerular nephritis.

James Turner Holland, Three Rivers, Texas; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1906; aged 56; died, May 14, near Comstock, of heart disease.

Andrew A. Bradford ⊕ Bremen, Ohio (licensed, Ohio, 1896); president of the county board of health; for six years president of the school board; aged 63; died, June 5, of nephritis.

Frederick William Jackson, Jefferson, Maine; Long Island College Hospital, Brooklyn, 1885; member of the Massachusetts Medical Society; aged 67; died, June 4, of angina pectoris.

William Teller Clute, Round Lake, N. Y.; Cincinnati College of Medicine and Surgery, 1879; for eleven years health officer of Schenectady; aged 76; died, May 22, of heart disease.

James Joseph Pfadt ⊕ Erie, Pa.; Medico-Chirurgical College of Philadelphia, 1912; on the staff of St. Vincent's Hospital; aged 47; died, April 26, of carcinoma of the parotid gland.

Francis Crudden ⊕ Jersey City, N. J.; University of Louisville School of Medicine, 1906; aged 80; died, May 7, at the Jersey City Hospital, of bronchopneumonia and myocarditis.

William R. Burr, Auburn, Ky.; University of Louisville School of Medicine, 1887; member of the Kentucky State Medical Association; aged 62; died, June 5, of heart disease.

John Lewis Thomas, Akron, Ohio; Ohio Medical University, Columbus, 1896; member of the Ohio State Medical Association; aged 55; died, June 25, of lobar pneumonia.

Barnett Quel ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1900; aged 50; died, June 16, at St. Vincent's Hospital, of heart disease.

Henry Lorain Carlisle, Windber, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1896; aged 63; died, April 13, of chronic nephritis and uremia.

Berry T. Crofts, Tellico Plains, Tenn.; Chattanooga Medical College, 1907; aged 47; died, March 28, at Madisonville, of injuries received in an automobile accident.

Myron L. Huntington, Port Wing, Wis.; University of Michigan Homeopathic Medical School, Ann Arbor, 1883; aged 69; died, June 3, of chronic myocarditis.

William Victor Messick, Smyrna, Del.; University and Bellevue Hospital Medical College, New York, 1899; aged 49; died, March 15, of cerebral hemorrhage.

Edmund West Eede, Detroit; Medical Department of Columbia College, New York, 1886; aged 64; died, June 15, at the Harper Hospital, of pneumonia.

August Emanuel Tamiesie, Portland, Ore.; Willamette University Medical Department, Salem, 1902; aged 53; died, June 12, of acute dilatation of the heart.

John William Laird, Pasadena, Calif.; University of Maryland School of Medicine, Baltimore, 1891; aged 65; died, May 12, of cerebral hemorrhage.

James B. Hall, East Franklin, Vt.; University of Vermont College of Medicine, Burlington, 1873; aged 79; died, March 23, of arteriosclerosis.

John Clifford Crawford, Waukon, Iowa; Chicago Medical College, 1882; aged 71; died, April 28, at Philadelphia, of acute dilatation of the heart.

J. Loring Courtright, Cuyahoga Falls, Ohio; Starling Medical College, Columbus, 1903; aged 48; died, April 4, at Massillon, of acute uremia.

Frank F. Hellmann ⊕ Cincinnati; Miami Medical College, Cincinnati, 1877; aged 71; died, June 21, of diabetes mellitus and pulmonary tuberculosis.

True Palmer Gottschalk ⊕ Sioux Falls, S. D.; Indiana University School of Medicine, Indianapolis, 1923; aged 32; died, June 18, of sinusitis.

John C. Brown, Vincentown, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1879; aged 70; died, June 7, of arteriosclerosis.

John Thomas DeVoe, Stockton, N. Y.; Eclectic Medical College of the City of New York, 1888; aged 69; died, May 13, of paralysis.

Frank L. Daniels, Salisbury, N. C.; Leonard Medical School, Raleigh, 1910; aged 56; died, April 29, of chronic interstitial nephritis.

Walter H. Graves, Charlotte, N. C.; Leonard Medical School, Raleigh, 1898; aged 51; died, May 8, of heart disease.

John Daniel Jessup, Hurley, Mo.; Barnes Medical College, St. Louis, 1895; aged 64; died, May 17, of diabetes mellitus.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

THE LA-MAR REDUCING SOAP FRAUD

The Federal Authorities Debar a Fantastic Swindle from the Mails

H. J. Brown of Cleveland, Ohio, has been quacking it for years. His latest piece of fakery was carried on under the trade name "La-Mar Laboratories"—although, of course, there were no laboratories—and the product he sold "La-Mar Reducing Soap." In this latest swindle Brown has been spending $120,000 annually on advertising alone. His *gross* receipts were only between $125,000 and $150,000 a year. Once more attention is called to the fact that the mail-order swindler lays himself open to punishment, while the newspaper or magazine that not only makes the swindle possible, but makes more money out of it than the faker himself, is exempt.

Every physician knows, and the vast majority of intelligent laymen know, that there is no soap or other substance which, when rubbed on the surface of the body, will reduce weight. Nevertheless, newspaper and magazine publishers, who, as a class, are certainly not below the average in intelligence, have accepted H. J. Brown's money and aided him in swindling the public with his La-Mar Reducing Soap. In the files of the Bureau of Investigation are a few advertisements of this humbug that appeared in 1925. We find an illustrated advertisement, for instance, in the *North American Almanac*, another in *True Romances*, a similar one in *Photoplay Magazine*; a still larger advertisement appeared in the *Smart Set*, one in *True Story Magazine*, in *Movie Magazine*, in *Fawcett's Magazine*, in the Chicago *Tribune*, in the Chicago *American* and the Chicago *Herald and Examiner*. These, of course, are only a few of the publications that shared in the profits of the sale of this fraudulent nostrum.

Does Your Husband Drink?
Druggist Tells How to Cure the Liquor Habit at Home
Tell Your Friends About Nicotol—The Enemy of Tobacco
Wash Away Pounds of Fat Double Chins and Years of Age with La-Mar Reducing Soap
NOCOMER

A fake cure for the liquor habit, another for the tobacco habit and a fantastically fraudulent obesity cure are some of the business activities of H. J. Brown of Cleveland, Ohio.

BROWN'S OLDER QUACKERIES

La-Mar Reducing Soap fake is not the first of Brown's quackeries. For some time he exploited a fraudulent cure for the liquor habit, which was sold under the claim it could be given secretly. This form of mail-order charlatanry is especially cowardly and cruel, because the mother, wife or sister who purchases such a "cure" in the belief that a son, husband or brother can be secretly cured is, in the very nature of the case, unlikely to attempt to get justice after the swindle has been discovered. Brown's cure for the alcohol habit was known as "Tescum." According to the Tescum advertisements, H. J. Brown used to be a drunkard. Tescum was analyzed by the Dairy and Food Division of the Board of Agriculture of Ohio a few years ago and found to consist chiefly of tartar emetic, three cents worth of this dangerous irritant poison being sold, without any warning, for one dollar.

Then Brown went into the tobacco-habit cure business, selling "Nicotol," which had a supplementary treatment called "Tocosan." Nicotol, it seems, contained atropine sulphate, nux vomica, quassia, gentian and cinchona compound, while Tocosan had arsenic trioxide, nux vomica, podophyllum, gentian, ginger and taka-diastase. So much for H. J. Brown's previous activities.

In the case of the La-Mar Reducing Soap business, the postal authorities notified Brown a few weeks ago that he must show cause why a fraud order should not be issued against him and the La-Mar laboratories. On May 15, 1926, Brown's wife (Edna B.), president of the La-Mar Laboratories (H. J. Brown being general manager, secretary and treasurer), appeared at Washington accompanied by an attorney, W. M. Ketcham of Chicago.

ENTER MR. KETCHAM

Those who follow the history of medical mail-order swindles will recognize Ketcham's name. W. M. Ketcham, it seems, defended deafness-cure-quack Branaman, who was put out of business some years ago, as well as F. W. Willard and Oren Oneal, who defrauded the public out of $75,000 a year by means of a fake cure for pyorrhea. Ketcham operates the imposingly named "Federal Advisory Association," whose apparent function is to furnish information (to those willing to pay for it) on how to run a medical mail-order concern without technically violating the law. Ketcham, it is said, used to be a postoffice inspector, who in 1910 went into business for himself. It was Ketcham who appeared for quack Stunz, the faker behind the Melton Laboratories, Hiobin Company and Renex Company—all fraudulent concerns that were put out of business in August, 1925. It was entirely fitting, therefore, that the Browns should employ Ketcham to defend their fakery.

When Ketcham and Mrs. Brown appeared at Washington, they declared that they did not desire to go into a hearing, but wanted to be permitted to operate a drug store business only. This is the usual method of the mail-order quack. When the postal authorities went after Graham, who exploited the "Neutroids" obesity cure fake on the mail-order plan, this quack, it will be remembered, signed an affidavit declaring that he would cease using the mails to exploit this fraud, and no fraud order was issued against him. He then continued the same fake through drug store channels.

Mrs. Brown and Ketcham were informed that the Postoffice Department insisted on disposing of the case on its own merits, and the Solicitor for the postoffice, in his memorandum to the Postmaster General recommending the issuance of a fraud order, sums up the facts regarding the La-Mar Reducing Soap concern. To quote:

> "The business consists in the sale, through the mails, of an article called La-Mar Reducing Soap. The ingredients of the soap, as given to the postoffice inspector who investigated this case by Mr. H. J. Brown, who is the husband of Mrs. Edna B. Brown, and who is designated as secretary and treasurer, are iodide of potassium, sassafras and cocoanut oil. The soap is manufactured by Lancaster (Pa.) and Cincinnati (O.) concerns. The evidence shows that H. J. Brown holds the capital stock of $50,000, that he is general manager as well as secretary and treasurer. His wife is president of the concern and is also active in its management. Mr. Brown informed the inspector that he spends about $120,000 annually for advertising purposes and that the gross receipts are between $125,000 and $150,000 per year. He stated that between 200 and 300 orders are filled daily. Mr. Brown claims that he was once in the drug business and in this way originated the soap formula. A little printed folder used by

the La-Mar Laboratories is captioned as follows in large display type:

"'Wash Away Fat and Years of Age with La-Mar Reducing Soap.'"

"This page also contains a cut showing three female figures, one very stout, one not so stout, and the third, slender, with the word 'reduce' printed alongside in such manner as to plainly indicate that the very obese woman can 'reduce' to the lines of the slender woman."

The memorandum then quotes a number of claims made for La-Mar. Following these, the solicitor states that there is evidence in the case of a full and complete report from Dr. Lyman F. Kebler, a physician-chemist who is in charge of the Special Collaborative Investigations of the Bureau of Chemistry of the United States Department of Agriculture. Dr. Kebler's report covered the alleged value of La-Mar Soap in the treatment of obesity, and full opportunity was given Mrs. Brown to go into the merits of the case and deny, if she could, the government's charges. She, however, did not do so. The memorandum continues:

"From the evidence I find that such claims as those hereinbefore quoted from the concern's printed folder are, one and all, false and fraudulent. Fat can not be washed away, whether from any particular portion or from the entire body. Dieting and exercising, which the promoters claim are unnecessary, are, in fact, the only effective means known by medical experts for fat reduction when practiced under the direction of the physician and in certain selected cases.

"That the promoters realize that dieting is really the effective agent in fat reduction is indicated by a statement in the circular giving directions for the use of the soap. Of course, this direction circular is received by the patient after the soap has been purchased."

It is common for mail-order quacks in selling their chief line to have a number of side lines on which they build up a handsome profit. H. J. Brown's fakery was no exception. As the memorandum says:

"In the literature of the concern there is offered for sale at $3 each an article called the Slen-Mar Reducing Brush, recommended to be used in conjunction with La-Mar Reducing Soap. Fourteen cakes of soap and the reducing brush are offered for $4.50. From this it would appear that the soap needs the assistance of a brush and the exercise incident to its use.

"According to the evidence, the concern does not hesitate to recommend and sell its soap to persons who want to reduce as much as sixty pounds or more, without any information as to the cause of the obese condition, the physical condition, or habits of the patient. There is in evidence the case of a woman who said she was sixty years old, weighed 240 pounds, and who asked that if the soap would take off sixty pounds and make her ten years younger, the concern might send three cakes of soap, priced at $1. The soap was forwarded to the writer in a few days without further question. . . .

"The concern also claims that the fat is 'dissolved' and removed and the skin left smooth, unwrinkled, and healthy. According to the evidence, there is nothing in the soap that will dissolve and remove fat, or that will 'shrink' the skin as claimed by the concern. There will be no such dissolution and removal of fat as to affect the skin. The soap is principally fat and it is quite apparent that fat will not dissolve fat.

"The evidence shows that H. J. Brown formerly operated the H. J. Brown Medical Company, selling Tescum and Nicotol as a cure for the tobacco habit. This business received the attention of the Department at the time. According to newspaper advertisements, Brown is still in this business although he informed the postoffice inspector at the time of an interview in the instant case that he had no other business.

"It is reported by the postmaster at Cleveland, Ohio, under date of April 3, 1926, that the concern receives an average of 200 letters daily. According to the evidence, very little, if any, mail relating to the business is addressed to H. J. Brown and I therefore recommend that his personal name be not included in the fraud order.

"The evidence shows, and I so find, that this is a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations, and promises.

"I therefore recommend that a fraud order be issued against the La-Mar Laboratories at Cleveland, Ohio."

A fraud order was issued, June 7, 1926. The Journal only regrets that, as Brown was able to spend $120,000 annually with newspapers and magazines that helped him swindle the fat, the publishers of these advertisements are, under the law, exempt from punishment. Those familiar with Brown's past record in using the mails to humbug the public will speculate on the next scheme he will take up.

Correspondence

WATER: ENOUGH, MORE, OR LESS

To the Editor:—I desire to make some supplementary remarks on an editorial which appeared in The Journal, June 19, entitled, "Water: Enough, More, or Less."

The editorial is correct so far as it goes. Some experiences that I have had with a low-water diet lead me to believe that it is not always harmless, and that simply to institute such a regimen without thought of the etiology of the edema would in many instances prejudice the recovery of the patient. It is admitted that inability to concentrate urine is a compensatory activity in true suburemia, i. e., when the urea concentration of the plasma is high, and that the continued welfare of the patient calls for the use of comparatively large quantities of water for the diuretic effect. This situation often occurs in moderate edemas. A low water diet under such circumstances is contraindicated, even for the purpose of conducting a concentration test.

You have called attention rightfully to the presence of an excess of sodium chloride in the plasma as one cause of edema. In nephritic edema it is always found and is demonstrable by suitable laboratory methods. The edema is apparently the result of an accumulation of sodium chloride in the plasma and possibly the tissues, the hold-up in the excretion of water following in order to maintain the p_H and other physicochemical factors at a constant. We must postulate inability of the kidney to excrete sodium chloride in amounts ingested. Hydremia first occurs, and finally the permeability of the vessel wall pathologically increases, permitting escape of water into the tissues. This is at present our point of view to account for the phenomenon of edema of nephritic origin.

There is another factor, however, which is rarely taken into account. The presence of an excess of glucose in the plasma will, it appears, have the same effect in producing edema of the tissues of the legs, for instance (to a moderate degree, and presumably by the same mechanism), as salt will. Concealed diabetes is often undiscovered, owing to the absence of sugar from the urine. It becomes necessary to learn the glucose content of the plasma to be sure of the diagnosis.

Therefore, it becomes necessary prior to the exhibition of a water free diet to be sure (1) that the patient has a blood stream which has a urea content below 40 or 50 mg. per hundred cubic centimeters of plasma or the withdrawal of water will precipitate uremia; (2) that the salt in the diet is reduced to the lowest possible level, less than 2 Gm. in twenty-four hours, or the withdrawal of water will lead to a disturbance in physicochemical relations in the blood stream with deleterious results; (3) that any hyperglycemia that may be present is discovered and the sugar level reduced by the use of insulin. As a matter of practice, it is quite certain that cases of edema accompanied by hyperglycemia are always associated with more or less plasma supersalinity.

Finally, a low-water diet will not be found necessary if the salt and sugar content of the plasma are properly handled.

Reducing these elements will automatically reduce the water intake and take care of the edema, at least in stages when it can be taken care of at all. The patient, in the meantime, may drink as he chooses—it is quite certain that he will not drink too much unless urged to do so arbitrarily.

Harris A. Houghton, M.D., New York.

SCARLATINA, MORBILLI AND RUBELLA

To the Editor:—I note in Queries and Minor Notes that several physicians are in a quandary how to distinguish German measles from scarlet fever, while both affections prevail. May I call attention to the following observation made by me and recorded many years ago; namely, whereas in morbilli and scarlet fever the skin of the patient is usually very dry and hot, in German measles the skin is quite moist and often bathed in perspiration. This is due to the fact that in this disease the sweat glands participate in the general engorgement of the superficial glands of the body.

Herman B. Sheffield, M.D., New York.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BANNERMAN'S INTRAVENOUS SOLUTION

To the Editor:—What can you tell me about the Wm. Bannerman Co. and their intravenous solution? L. W. B., M.D., Oak Park, Ill.

To the Editor:—What about the enclosed literature on intravenous medication . . .? W. F. C., M.D., Evansville, Ind.

To the Editor:—Enclosed find advertisement of the Wm. Bannerman Co. of your city. Surely such wonderful remedies have not escaped your notice, and I would appreciate a report on their usefulness.

L. F. M., M.D., Summitville, Ind.

To the Editor:—Enclosed is literature from Wm. Bannermann Co. Do you know anything about this company and its claims to cure varicose veins, etc.? J. J. M., M.D., Mount Carmel, Ill.

To the Editor:—Who is Wm. Bannerman? . . . The enclosed came by post this morning and reads like a "catch penny." It should be exposed if exploited by an unscientific, irresponsible company.

B. VanS., M.D., Fort Wayne, Ind.

To the Editor:—I am enclosing a letter and literature from the William Bannerman Company. The appeal in the letter . . . together with a statement in the pamphlet [on the cure of varicose veins.—Ed.] should have an airing. E. K., M.D., Chicago.

Answer.—The "literature" enclosed with these and a number of other inquiries on the same subject is a pamphlet on the "Non-Surgical Treatment of Varicose Veins," though at least one includes a pamphlet in which the same remedy is recommended also for "Tuberculosis," "Pneumonia-Influenza," "Septicemia and Acute Infectious Diseases," "Anemia," "Rheumatism," "Syphilis," "Nephritis," "Chronic Endocarditis," "Chronic Abscess," "Arthritis Deformans" and "Puerperal Sepsis." The nostrum recommended is Bannerman's Intravenous Solution, marketed by the Wm. Bannerman Company, of Chicago. The original Bannerman was a veterinarian, who first exploited the preparation as a cure for consumption and later frankly as a "cure-all" (The Journal, May 31, 1913, p. 1724). The preparation was refused recognition by the Council on Pharmacy and Chemistry because vague, indefinite and misleading statements were made regarding its composition, because it was recommended for anemia, tuberculosis and syphilis under grossly exaggerated and unwarranted claims, and because intravenous injection of complex and indefinite mixtures is unscientific and dangerous (The Journal, Jan. 2, 1915, p. 70). In 1917 a consignment of Bannerman's Intravenous Solution was declared by federal authorities to be adulterated in that its strength and purity were below that claimed, and to be misbranded in that it was falsely and misleadingly labeled (The Journal, Feb. 8, 1919, p. 440).

The advertising sent by our correspondents shows that the same ingredients are claimed as at the time of the Council's rejection though no quantities are given; it also shows that the preparation is still advocated as a cure-all, though most of the "copy" deals with varicose veins. The letter referred to by one of our correspondents shows that the appeal of the Bannerman company is still to ignorance and cupidity.

It is not doubted that a mixture containing, as is claimed, "Hydrargyri albuminas, Ferri albuminas, Sodii chloridum, Calcii salicylicum, Guaiacol, Creosote (Beechwood)," if injected intravenously might cause "the veins for a certain distance from the point of injection" to become "more or less indurated" or "after from one to three or four more injections . . . practically obliterated." Nor is there any doubt that "a fee of from $25 to $300 can be had for the treatment." There is, however, a very great certainty that the intravenous injection of such a shotgun mixture may result in far more serious consequences to the patient than the payment of a large fee and the induration or obliteration of a few veins.

TREATMENT OF SHELL SHOCK

To the Editor:—We have read your answer to the questions on shell shock in Queries and Minor Notes (The Journal, June 5). We are making a study of the convalescent care of neuropsychiatric cases and we should be much pleased if you could give us the details of the educational measures or training of the shell-shocked patients whom you mentioned, that enabled them to return to the front so soon.

Pauline Jordan, New York.

Answer.—The majority of the shell shock cases during actual hostilities were of the hysterical type, and the method of treatment consisted in bringing the man to realize that the symptoms of which he complained were of mental origin. The means used for this purpose varied with the patient and with the medical officer. Often they were in the nature of electrical shocks, sudden noises or lights, sudden commands under conditions of distraction of attention, etc., which brought about the use of the paralyzed part or the function that was in abeyance. Following this, the treatment consisted in rest, encouragement and psychotherapeutic talks and explanations. It is also probably true that many of the so-called cases of shell shock were true exhaustions resulting from prolonged emotional stress with insufficient sleep, food and water. Such men rapidly recovered with proper rest and food, and should probably not have been classed as psychoneurotic, though this foundation was common in the development of a true psychoneurosis.

The intolerable situation that men were endeavoring to escape in the fighting units was obvious, and in this respect the situation is different from the psychoneuroses of civil life. Here an analysis is necessary in many cases to determine the nature of the intolerable situation. Furthermore, in civilian life (and this includes the vast majority of ex-service men with psychoneuroses) the hysterical type does not form so large a proportion; the difficult situations to be faced are not so acute or so big, being often a multitude of small factors with prolonged bad habits of adjustment. The treatment must be correspondingly detailed and prolonged, and consist in a planned effort to replace faulty habits of adjustment with others that are more satisfactory. The book on hysteria by Kretschmer (reviewed in The Journal, July 10, p. 119) is well worth reading from the point of view of the mechanisms at work in producing the hysteria, though it does not detail the methods of treatment used by the army physicians.

VITALIZING COD LIVER OIL

To the Editor:—Is cod liver oil vitalized by setting the container in the sun during the time the patient is using it internally as a tonic? If so, are the food articles rendered more valuable by being exposed for a time to the sun's rays? Would exposure of milk and other food to the quartz light have a vitalizing effect? Is the vitalizing value only a theory? B. A. Arnold, M.D., Freeport, Ill.

Answer.—Recent experiments carried out in a number of laboratories in this country and abroad have demonstrated that ultraviolet rays ranging in wave length from 250 to 302 millimicrons are capable of inducing rickets-preventing properties in most naturally occurring foods. With the discovery of this fact, certain commercial interests immediately sought to make use of ultraviolet rays as well as sunlight in increasing the therapeutic value of cod liver oil. They proceeded on the assumption that since cod liver oil contains cholesterol, which can be made antirachitically active by exposure to ultraviolet rays, treatment of the oil would so increase its antirachitic properties as to make it possible to reduce materially the dosage usually recommended by the manufacturers. As cod liver oil is far from being a palatable substance, a diminution in the dose required to produce the desired effect would make it a more acceptable medicinal agent. At present there are no data available to prove that cod liver oil can have any of its properties increased by exposure to either sunlight or to the ultraviolet rays of the quartz mercury vapor lamp.

It is well known that vitamin A, contained in cod liver, is easily destroyed by exposure to light in the presence of oxygen or air. It is therefore reasonable to expect that in the exposure of the cod liver oil there would be a tendency to a diminution in its vitamin A content. The manufacturers who have been advocating the exposure of cod liver oil to sunlight have anticipated this difficulty, and to minimize it have recommended that the cod liver oil should not be exposed to sunlight longer than fifteen minutes. It is inconceivable, according to our present knowledge, how such a short exposure could have any effect in imparting any desirable properties to the oil, and the burden of proof that an effect is produced most assuredly rests with the manufacturers.

The greatest probability of the practical use of the induction of rickets-preventing properties by ultraviolet ray treatment appears to rest in the treatment of oils, cereal products and probably, eventually, purified isolated organic compounds. Practically all vegetable oils can be made antirachitically active in many cases—approximating the degree of activity found in cod liver oil—by exposure to ultraviolet rays. In common with these materials, milk can also be made antirachitic; but milk represents such a mixture of labile substances that it cannot be treated without imparting to it a decided change in taste. Furthermore, there occurs concomitantly a destruction of vitamin A. In the light of these changes, it does not appear as though ultraviolet irradiation of milk for the induction of antirachitic properties will prove any more practical than the use of the same agent has proved practical for its sterilization.

PITUITARY EXTRACT IN ABORTION—STARVATION OF MOTHER—UTERINE HEMORRHAGE

To the Editor:—1. Is it good practice to use pituitary extract to expel the retained membranes, etc., in an incomplete abortion of from three to four months? 2. What is the effect of moderate starvation of the mother on the fetus of about three to four months? 3. A woman, aged 45, has had a spell of continuous uterine bleeding, lasting three or four days, more profuse than normal. Periods have been regular before. Pelvic examination is normal; there have been no pregnancies lately; the systolic blood pressure is 240; examination of the urine for albumin is positive; the specific gravity is 1.010. Should the bleeding be left alone to relieve hypertension and the frequent headaches, or should it be checked to stop her increasing weakness? The patient is quite pale, and the pulse is 96, small and wiry.

M.D., New York.

Answer.—1. Yes, especially in febrile abortions. Excellent results are obtained by giving the patient 0.2 Gm. of quinine by mouth every hour for five doses and then 0.5 cc. of solution of pituitary, U. S. P., hypodermically every two hours thereafter. Usually the retained tissue is expelled after the first or second hypodermic.

2. Practically none at all.

3. Unless the patient is definitely anemic, the bleeding should not be checked, because it has a beneficial effect on the high blood pressure and its consequent symptoms. If anemia is present and becomes progressively worse, the bleeding should be stopped. Even if the bleeding is not checked, should the patient continue to bleed unduly and especially irregularly, a diagnostic curettement should be performed to rule out cancer of the uterus.

CALCIUM HYDROXIDE ALKALINITY IN WATER

To the Editor:—The specifications for potable water, as set forth by the American Public Health Association, provide that the water after being treated with lime must not contain hydrate alkalinity.

I have not been able to find literature on the subject, or any one who can tell me the reason for this particular specification, but am of the opinion that there must be some objectionable physiologic effect caused by drinking water that contains a hydrate alkalinity. Since search and inquiry have not brought me information on the subject, I am writing you to see whether you can send me or direct me where to find information that will clear up the subject for me.

J. B. Wesley, Kansas City, Mo.

Answer.—Extensive inquiry does not reveal any case in which a softened water treated with reasonable care has been found harmful to health. Ordinarily in water softening it is customary to avoid the presence of hydroxide alkalinity. Before making an interpretation of calcium hydroxide alkalinity, it should be borne in mind that phenolphthalein alkalinity does not necessarily mean hydroxide. If the character of the water is such that excess hydroxide is actually necessary for successful softening, the amount should be accurately determined and the question referred to the committee that promulgated the new standards.

MALE FERN AND PUMPKIN SEED FOR TAPEWORM

To the Editor:—I should like to ask the easiest method of administering male fern to a delicate child of 5 for the treatment of tapeworm. I am also especially interested in the use of pumpkin seeds for this disease. Please give me the method of preparing and using them. This child has passed segments of the worm for more than three years. Please omit my name.

M.D., Missouri.

Answer.—There is really no easy way of giving male fern to a child. The remedy has a decidedly disagreeable taste. The following prescription yields perhaps as good a disguise as might be devised. It is credited to G. Railliet by Gaston Lyon, from whose book on "Clinique thérapeutique" (Paris, Masson et Cie, 1924, p. 404) it is taken.

℞ Oleoresin of aspidium	2.50	Gm.
Fluidextract of glycyrrhiza	10.0	cc.
Syrup of orange flowers	20.0	cc.
Peppermint water	50.0	cc.

Label: To be taken at one dose.

The usual dose of oleoresin of aspidium for children is 0.5 Gm. for each year of age, but not exceeding a maximum of 5 Gm. Hence, for a child 5 years old, the foregoing dose will probably be correct.

It may be, however, that a child might be more readily persuaded to take the dose floating on tea or maple syrup by being promised some candy or other dainty afterward, than the rather large quantity of dark brown fluid of none too pleasant taste resulting from the prescription.

Pumpkin seeds, because of their harmlessness and inoffensiveness, are particularly suitable for children. The seeds, which must not be more than 1 month old, should be deprived of their coverings, and from 30 to 45 Gm. of the cleaned seeds beaten to a paste with 25 Gm. of sugar and finally 60 cc. of milk be added. After this has been taken at one dose, the child should lie down, as this lessens the liability to emesis. One hour later castor oil or some other cathartic is administered.

SYPHILOPHOBIA

To the Editor:—A dentist, aged 33, states that six months ago, after worrying for six weeks about a lesion on the penis that was diagnosed as chancre, his mind suddenly appeared to "snap," when he became aware that he could not think of anything but his trouble. He states that he has had numerous terrifying impulses to suicide. He complains of insomnia, loss of ability to concentrate, loss of interest in his work, impairment of attention, and some loss of memory. Is this a typical picture of syphilophobia? Have similar cases been reported? What is the probable course, prognosis and treatment? Kindly omit name.

M.D., Louisiana.

Answer.—The most pronounced cases of syphilophobia occur in the absence of the disease. It would be necessary first to determine whether or not the man has syphilis by making careful neurologic, mental and serologic examinations. The possibilities of precocious general paralysis and of dementia praecox should be kept in mind. If the patient has syphilis plus syphilophobia, without central nervous system involvement, intensive treatment of the disease with due attention to the mental and emotional disturbances should effect a cure.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

New Hampshire: Concord, Sept. 9-10. Sec., Dr. Charles Duncan, Concord.

Oklahoma: Oklahoma City, Sept. 14-15. Sec., Dr. J. M. Byrum, Shawnee.

South Dakota: Custer, July 20. Director, Med. Lic., Dr. H. R. Kenaston, Bonesteel.

Indiana Reciprocity Report

Dr. William T. Gott, secretary of the Indiana Board of Medical Registration and Examination, reports that 11 candidates, including 1 osteopath, were licensed by reciprocity during 1926 to May 17. The following colleges were represented:

LICENSED BY RECIPROCITY		
College	Year Grad.	*Reciprocity with*
University of Colorado School of Medicine	(1925)	Colorado
Rush Medical College.....(1918) Wisconsin, (1922),	(1924)	Illinois
University of Illinois College of Medicine	(1925)	Illinois
Woman's Medical School of Northwestern University	(1898)	Illinois
University of *Louisville* School of Medicine	(1913)	Kentucky
University of Michigan Medical School	(1924)	*Michigan*
University of Minnesota Medical School	(1895)	Minnesota
University of Cincinnati College of Medicine	(1923)	Ohio
Osteopath		Missouri

Book Notices

Nephritis. By Herman Elwyn, M.D., Assistant Visiting Physician, Gouverneur Hospital, New York, N. Y. Cloth. Price, $5. Pp. 347, with 2 illustrations. New York: Macmillan Company, 1926.

The development of a sound working basis for the study of nephritis has occupied the attention of clinicians and pathologists. Much study has been given to the effort of correlating clinical phenomena with pathologic findings; at the present time most workers feel that the situation is in a state of flux, and that absolute dicta cannot yet be pronounced. The work of the school of Volhard and Fahr has perhaps been the most stimulating and most interesing of any group, but even their studies are not accepted entirely as final. Elwyn has rendered a real service in bringing together the conceptions of this school of thought in interesting and readable form. The book is well planned, and presents a delightful story that is bound to stimulate even the disbelievers into an attitude of thoughtful attention. It is our belief that at the present time some of the dicta announced are not justified by the facts thus far produced: certainly not all are satisfied by a single mechanical explanation of hypertension as "a compensatory mechanism which would attempt to prevent any accumulation of waste products in the blood" (page 41). Many sound students of nephritis find great difficulty in placing their "cases" in the classified lists of Volhard and Fahr, despite honest efforts to collect all the data necessary for such classification. Differences in point of view or of theoretical reasonings are not to be interpreted as criticism; but it would seem that this volume would have greater strength if the line of demarcation between theoretical reasoning and ascertained fact were more sharply drawn. As it now stands, the uninitiated might receive wrong impressions. This danger is slight, however, when compared with the real service the volume undoubtedly renders in stimulating better study of cases of nephritis.

Abhandlungen aus der Neurologie, Psychiatrie, Psychologie und ihren Grenzgebieten. Herausgegeben von K Bonhoeffer. Heft 33. Gefühl und Erkennen. Von J. S. Szymanski. Paper. Price, 12 marks. Pp. 204. Berlin· S. Karger, 1926.

This study of feeling and cognition in the broad sense is based on a study of pathologic variations of the psychic life as observed in the unstable and the insane. Reasoning from the circumstance that irritation and extirpation experiments on the animal brain have aided in explaining normal brain functions, the author has undertaken to investigate the normal psychology from a study of abnormal psychology as encountered in the insane asylum. He sets out to examine the structure and qualities of the feelings or affects, which he attempts to classify. Secondly, he studies cognition, or knowing, as related to feeling, for which he gives a new classification. The material studied was from the Wagner clinic in Vienna, which was utilized for this special purpose in an exhaustive manner. While not of great practical value, this brochure constitutes a definite psychologic contribution to psychiatric literature.

The Chemical Aspects of Immunity. By H. Gideon Wells, Ph.D., M.D., Professor of Pathology, University of Chicago. American Chemical Society, Monograph Series. Cloth. Price, $4 net. Pp. 254. New York: The Chemical Catalog Company, Inc., 1925.

This volume is one of a series of monographs published under the auspices of the American Chemical Society, with a view to founding an American chemical literature without primary regard to commercial considerations. The author has dedicated this work to Drs. H. T. Ricketts and Richard Weil, pioneers in the field of immunology. The book begins properly with an explanation of the terms used in this new field. It then takes up the chemical character of antigens and antibodies of various types, leading to a consideration of the specificity of these substances and of the diagnostic reactions that have been developed in recent years. Final chapters concern the phenomena of addiction and defense against narcotic and organic poisons. The subject is so technical that it could hardly be considered in a manner understandable to the man on the street. Dr. Wells has attempted rather to direct his thesis to the chemist, biologist, and the enlightened physician.

Advising the Tuberculous About Employment. By W. I. Hamilton, Personnel Director, Boomer-Dupont Properties Corporation, New York, and T. B. Kidner, Institutional Consultant, Technical Adviser, Central New England Sanatorium Association Industrial Settlement. Cloth. Price, $2. Pp. 171. Baltimore: Williams & Wilkins Company, 1926.

This is a reprint of articles originally published in the *Journal of Outdoor Life*, with certain reediting and additions. One of the great social problems is the care of the person who has passed a siege of serious illness and who wishes to undertake work that will not make him unduly liable to suffer relapse. The authors take into account the examination of the prospective worker, with a view to ascertaining his qualifications and adaptabilities, studying various manufacturing processes as to their dangers, and also methods of enlisting cooperation through suitable agencies. The book is supplemented with an extensive bibliography of reading notes. It is a valuable contribution for the physician, the public health officer and the tuberculous patient.

Inorganic Quantitative Analysis. By Harold A. Fales, Ph.D., Associate Professor of Chemistry at Columbia University. Cloth. Price, $3.50. Pp. 493, with 49 illustrations. New York: The Century Company, 1925.

This is quite different from the usual textbook on quantitative analysis. The author has presented minutely the manipulative requirements for each type of determination, together with a clear description of the fundamental theoretical considerations. The text is not elementary, but really requires the guidance of a good teacher to carry the student of quantitative analysis through it successfully. The book, however, will be valuable for the chemist because the theory is clearly exemplified, thus enabling solution of difficulties often encountered without merely resorting to empiricism.

The Further Studies on Decrementless Conduction. By Genichi Kato, Professor of Physiology, Medical College, Keio University, Tokyo. Cloth. Pp. 163, with 88 illustrations. Tokyo, 1926.

This is an excellent monograph on a very special problem in physiology—the problem to what extent the nervous impulse is modified in the way of slowness of conduction and weakening of intensity when the local region of the nerve is subjected to anesthesia and depression of drugs. The experiments reported seem well designed and executed. The volume is an example of the excellent research in the fundamental medical sciences that is being carried on in Japanese universities. The monograph will be of interest to men in pharmacology, men in general physiology, psychiatrists and neurologists who wish a clearer understanding of the physiology and pharmacology of nerve block.

Leitfaden der Diathermiebehandlung. Von Dr. A. Laqueur, Dirigierendem arzt des hydrotherapeutischen und medikomechanischen Institutes am Städtischen Rudolf Virchow-Krankenhause zu Berlin. Paper. Pp. 134, with 49 illustrations. Berlin: S. Karger, 1926.

Technic and indications for diathermy, according to the author, have not kept pace with the fast accumulating literature on the subject. This has resulted in an indiscriminate use of apparatus and a more or less chaotic conception of the physiologic effects and the mechanics of high frequency therapy. The present book is therefore an attempt to bridge the gap in the present status of this specialty. The book is divided into two sections: the first deals with the essentials of diathermy, including a short exposition of the generation of high frequency currents, the value of modern apparatus, and the rationale of a new type machine that produces a cross-fire diathermy effect within the treated structures. The cross-fire method is of interest because greater concentration of heat can be generated centrally, and the beneficial results obtained thereby are materially augmented. Theoretically, at least, this would be of benefit in the treatment of joint conditions in which deep centralization of heat is desired. The inclusion of the cross-fire apparatus into the scheme of diathermy, however, must be held in abeyance until additional proof by laboratory experimentation is forthcoming. One should accept novel effects and innovations in physical therapy with the same degree of conservatism as in other branches of orthodox medicine. The physiologic effect of thermopenetration is fully developed, because the author logically contends that greater appreciation of the secondary effects of deep hyperemia can follow only from a broader knowledge of the reflexes set into motion. The still frequent question as to whether high frequency currents penetrate into the deeper structures and become converted into caloric energy is answered by experimental data. By inserting thermopiles into various hollow viscera, such as the stomach, bladder and esophagus, definite temperature elevation could be demonstrated by treating the area under experiment by means of diathermy. The second half is devoted to an exposition of the technic in the treatment of certain diseases of the various specialties. The therapy is indicated or contraindicated according to the physiologic effects produced by deep heat on the diseased part. Thus, by constantly stressing the limitations and the possibilities of this physical agent, certain pitfalls can be avoided, and the results to be obtained thereby more assured. However, the evident attempt to include many special subjects into the limited space of the book has forced the author into dogmatic statements that leave the reader mentally dissatisfied. Particularly is this in evidence in the chapter on surgical diathermy. Since it is the desire of the writer to place before the reader the fundamentals of the subject, it would be in keeping to explain the difference between coagulation, fulguration, desiccation and cauterization. This is important because there is still popular confusion and misunderstanding as to what differentiates one from the other. Exposition of the effects of desiccation and cauterization is completely omitted from the author's text. In view of authentic reports on the delicate controllability of the desiccation method and its splendid cosmetic effects, this omission is regrettable. The suggestion for tonsil coagulation by fixing a pointed electrode within the depths of the tonsillar tissue for forty-five seconds should be sharply condemned. The pain and edema following such a procedure would make the operator extremely cautious if he was inclined to brave a second attempt. To advocate coagulation of benign neoplasms in the presence of the more refined method by desiccation is unsound; or to suggest the fulguration of neoplasms, which merely produces superficial carbonization, in the presence of the method by coagulation or desiccation, shows questionable orientation on the subject. The attempt to include a large variety of conditions within the limits of this much abbreviated exposition has placed the author in the unfortunate position of asking the reader to take much for granted. Its appeal, therefore, is less to the novice than to the experienced.

Old Masterpieces in Surgery. Being a Collection of Thoughts and Observations Engendered by a Perusal of Some of the Works of Our Forebears in Surgery Which Appeared in Serial Form in Surgery, Gynecology and Obstetrics During 1924 and 1925. By Alfred Brown, M.D. Privately published. Omaha, 1926.

The author has collected in a bound volume a series of articles that have been appearing regularly in *Surgery, Gynecology and Obstetrics*. Each of the essays is accompanied with quotations from the original works which it concerns and with facsimile reproductions of pages and of illustrations. Here the reader may secure in concentrated form an epitome of the rise of modern surgery, presented in a most interesting manner from sources which are to be consulted in the original in only a few places in the world.

The Proceedings of The Charaka Club. Volume VI. Boards. Price, $4. Pp. 145, with illustrations New York: Paul B. Hoeber, Inc., 1925.

The current volume of transactions of the well known New York society of medical aesthetes is fully up to the standard of previous volumes in interest and in beauty of presentation. Such titles as "Cogitations of a Crank Who is Trying to Reform" and "Demokedes, the Kratonian" stimulate the curiosity. The sketches in memory of Gerster provide a beautiful tribute, and the po[illegible]s. Dana and Peterson, moments of artistic pleasure

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

Experimental Pharmacology as a Basis for Therapeutics: A Text-Book for Students and Physicians. By Dr. Hans H. Meyer, Professor of Pharmacology, University of Vienna, and Dr. R. Gottlieb. Translated by Velyien E. Henderson, Professor of Pharmacology, University of Toronto. Second edition from the seventh revised German edition. Cloth. Price, $7. Pp. 656, with 89 illustrations. Philadelphia: J. B. Lippincott Company, 1926.

Modern pharmacology based on physiology and pathology of diseased organs and tissues.

The Thyroid Gland. By Charles H. Mayo, M.D., Professor of Surgery, University of Minnesota, and Henry W. Plummer, M.D., Professor of Medicine, University of Minnesota. The Beaumont Foundation Lectures. Series number four. Cloth. Price, $2.50. Pp. 83. St. Louis: C. V. Mosby Company, 1926.

Brief notes of the scope of periodical publication on current views of surgery and medical treatment of disturbances of the thyroid.

Die Elektrokardiographie und andere graphische Methoden in der Kreislaufdiagnostik. Von Dr. Arthur Weber, A. O. Professor an der Universitat Giessen. Paper. Price, 18 marks. Pp 208, with 139 illustrations. Berlin: Julius Springer, 1926.

Monograph on current views in which author criticizes German internists for too much attention to physicochemical technic and lack of interest in other methods of studying disease.

Die klinische Anwendung der Diathermie. Von Dr. Iwan von Buben, Assistent an der I. Frauenklinik der Universitat in Budapest. Mit einem Geleitwort von Universitatsprofessor Dr. Béla v. Kelen, Direktor des Röntgeninstituts der Universitat in Budapest. Paper Price, 11.40 marks. Pp. 175, with 85 illustrations. Leipsic: Johann Ambrosius Barth, 1926.

Outline of technic and excellent bibliography on this method of applying heat.

Modern Methods of Feeding in Infancy and Childhood. By Donald Paterson, B A., M.B., M.R.C.P., Physician for Diseases of Children, Westminster Hospital, and J. Forest Smith, M.R.C.P., First Assistant to the Clinical Unit, St. Thomas's Hospital. Cloth. Price, $3 Pp. 106. New York: Paul B. Hoeber, Inc., 1926.

Monograph giving British point of view in British English with references to British proprietary preparations.

A Bipolar Theory of Living Processes By George W. Crile. Edited by Amy F. Rowland. Cloth. Price, $5. Pp. 405, with 62 illustrations. New York: The Macmillan Company, 1926.

Evidence to substantiate the view that the "organism not only is driven by electricity but that it was originally created and constructed by electrical forces."

Vom Liebes- und Sexualleben. Erfahrungen aus der Praxis für Aerzte, Juristen und Erzieher. Von Dr. med. Ludwig Frank, Nervenarzt in Zurich. Erster und Zweiter Band. Paper. Price, 14 40 marks. Pp. 807. Leipsic: Georg Thieme, 1926.

The author explains by letters to his patients and colleagues how he handles mental disturbances based on sexual causes.

Modern Views on Digestion and Gastric Disease. By Hugh Maclean, M D, D.Sc., M.R.C.P., Professor of Medicine, University of London. Cloth. Price, $4. Pp. 170, with illustrations. New York: Paul B. Hoeber, Inc., 1926.

Monograph with emphasis on view that gastric cancer does not arise from ulcer.

The Principles of Anatomic Illustration before Vesalius: An Inquiry into the Rationale of Artistic Anatomy. By Fielding H. Garrison, A B., M.D. Cloth. Price, $2.50 net. Pp. 58, with illustrations New York: Paul B. Hoeber, Inc., 1926.

Delightful monograph of interest to anatomists, artists and cultured physicians.

Brainbridge and Menzies Essentials of Physiology. By C. Lovatt Evans, D.Sc., M.R.C.S., L.R.C.P., Professor of Physiology, University of London at St. Bartholomew's Medical College. Fifth edition. Cloth Price, $5. Pp. 508, with 197 illustrations. New York: Longmans, Green & Co., 1925.

New edition of standard British textbook.

Medicolegal

Statute of Limitations for Action Against Surgeon

(Hickey v. Slattery (Conn.), 131 Atl. R. 555)

The Supreme Court of Errors of Connecticut says that this was an appeal from the granting of a motion to set aside, on the ground that the statute of limitations had run against the cause of action, a verdict recovered by the plaintiff; but that, as he had failed to have the evidence made a part of the record, his appeal had no proper standing in court, and this court could in no event find error in the action of the trial court in setting aside the verdict. However, this court feels constrained, in the interest of speedy justice, to consider the question of the applicability of the statute of limitations which would of necessity arise on a retrial of the case.

The plaintiff was suing the defendant, a surgeon, for pain, suffering, incapacity, expenditures, and losses which he alleged to be due to the failure of the defendant properly to set and treat his broken arm. The complaint was in two counts, the first relying on the implied obligation of the defendant, arising out of his employment, to use proper skill and care; and the second resting on the alleged negligence of the defendant in the way in which he set and cared for the arm. Undoubtedly, in such a case, the plaintiff might lay his action either in contract or in tort. Most of the Connecticut statutes of limitation in their essential features were enacted long before the present methods of pleading and practice were adopted, and were designed to apply to the various actions known to the common law; and when, after the adoption of the practice act, their phraseology was changed, there was no intent to alter their scope in any way. In 1903 a statute, now appearing as section 6163 of the general statutes, was enacted, which reads: "No action to recover damages for injury to the person, or for an injury to personal property caused by negligence, shall be brought but within one year from the date of the injury or neglect complained of." The settled construction of this statute is that it applies only to actions to recover damages for injuries caused by negligence whether to the person or to personal property.

The cause of action for negligence stated in the second count was barred, unless the action was begun within the time fixed by the statute. That fact would not, however, bar the cause of action stated in the first count; for two distinct causes of action may arise out of one delict (fault), and where that occurs each is governed by the statute of limitations appropriate to it. The first count, which stated a cause of action for breach of contract, would fall within the provisions of section 6153 or those of section 6158 of the general statutes, according as the agreement was in writing or rested in parol (oral evidence).

Use of Part of Residence as Hospital for Incurables

(Pierce et al. v. St. Louis Union Trust Co. et al. (Mo.), 278 S. W. R. 398)

The Supreme Court of Missouri, division 1, in affirming a decree and judgment in favor of the plaintiffs, holds that a hospital for incurables is a trade or business dangerous, noxious and offensive to the neighboring inhabitants, within the inhibitions of the restrictive covenants of a deed of residential property providing that the owners of the lots in the subdivision shall not permit on any part of any or either of the lots "any trade or business of any kind, dangerous, noxious or offensive to the neighboring inhabitants." The court says that the evidence tended to show that the term "incurables" includes persons suffering from the well known social diseases, also locomotor ataxia, cancer, leprosy, and other similar diseases. The two patients harbored in the hospital in question were victims of social diseases. While such patients are to be pitied, and human kindness demands that they be properly cared for and ministered to, nevertheless the fact remains that they are, in every sense of that term, social outcasts. No self-respecting parent or head of a family would desire to have his children, or even the adult members of his family, live within sight or hearing of such a hospital. Aside from the ever present possible danger of infection, the mere presence of such an institution in their midst is abhorrent to the sensibilities of a home and family loving neighborhood or community. The use of the premises in question was a clear and positive violation of the restrictive covenants of the deed under which the defendants held title and possession. Nor did the fact that the structural design of the premises had not been changed from that of a dwelling house, nor the further fact that certain of the defendants used a portion of the premises as a place of residence, render the use of the premises any less a violation of the restrictions. That some years previously a physician resided with his family in one of the homes, and, like the good old "family doctor" of years now almost forgotten and gone by, maintained an office in his home, where he ministered to his patients and denoted his professional presence in the neighborhood by a simple sign on the house or office door bearing his name, the court cannot seriously regard as indicative or proof of waiver or abandonment of the restrictive covenants on the part of the plaintiffs. Nor does the court find that the trial chancellor erred in refusing in evidence the comparative values, affecting the property in question, with and without the restriction removed. The controlling question was whether the restrictive covenants were of any substantial benefit or value to the plaintiff owners. The trial court found that they were, and this court has not arrived at a different finding, the plaintiffs apparently being content to continue to use their several properties for single family homes, as they had done in the past, they not having been tempted or lured into converting them to any other use, despite the demands of commercialism and the afforded opportunities of gain and profit.

Society Proceedings

COMING MEETINGS

American Electrotherapeutic Association, Atlantic City, Sept. 8-11. Dr. Richard Kovacs, 223 E. 68th Street, New York City, Secretary.

Associated Anesthetists of the United States and Canada, Nottingham, England, July 20-23. Dr. F. H. McMechan, Avon Lake, Ohio, Sec'y.

Idaho State Medical Association, Sandpoint, Sept. 2-5. Dr. J. N. Davis, Kimberly, Secretary.

MEDICAL ASSOCIATION OF GEORGIA

Seventy-Seventh Annual Meeting, held at Albany, Ga., May 12-14, 1926

(Concluded from page 124)

Basal Metabolic Rate in Toxic Goiter

Drs. T. C. Davison and Hal M. Davison, Atlanta: Basal metabolic readings are essential to differentiate between thyrotoxicosis and other disorders simulating this condition. The degree of toxicity of goiters cannot be accurately estimated clinically, and a basal metabolic reading should be made in every case of thyroid enlargement. The basal metabolic reading in cases of exophthalmic goiter is, as a rule, an accurate index to the degree of toxicity. It is not only diagnostic but somewhat prognostic and indicative of treatment. The basal metabolic rate in adenomatous goiter is comparatively lower than in the exophthalmic type, and is of less value in determining the seriousness of the individual case. Following operation, basal metabolic readings should be made at intervals in all cases to direct treatment and to determine whether they become normal and remain so.

Adenoids and Tonsils in Childhood

Dr. A. J. Waring, Savannah: The adenoids may have, the tonsils probably have, a definite function. Omitting the obvious cases over which there can be no disagreement, each case should therefore be studied conjointly by physician and specialist, and the merits of the operation carefully considered. The question of adenoidectomy and tonsillectomy should not be considered conjointly but separately, for the pathologic condition is not always the same, the operative risk equal, or the need for excision identical. Preoperative study of the patient's condition to diminish the risk of fatality is not always comprehensive but certainly should be.

Feeding the Normal Infant

DR. R. GEORGE MCALILEY, Atlanta: The problem of infant feeding should be approached with common sense and a liberal point of view. The objective is the choice of a diet that will promote normal development without producing digestive disturbance or pathologic changes. The best diet is breast milk. It is essential that the mother have an adequate diet to produce good milk. Artificial formulas are based on caloric need, protein and fluid requirement. Vitamins and minerals must be added when necessary.

Studies in School Children from a Neuropsychiatric Point of View

DR. GEORGE L. ECHOLS, Milledgeville: About 50 per cent of feeblemindedness is due to birth injuries and infections in the prenatal stage and in infancy and childhood, and not to heredity. Institutional care is necessary in special cases; however, this only includes about 10 per cent of the group. The vast majority of children should be cared for in the homes and carried in our school system as far as their intelligence will permit.

Fallacy of Indigestion as a Diagnosis

DR. J. C. PATTERSON, Cuthbert: There is no more reason for making a diagnosis of indigestion than there is for making a diagnosis of "fever" or "high blood pressure." Disease of almost any organ of the body may cause these symptoms. Probably the majority of cases in which indigestion is complained of persistently and over a long period are gall tract disease, cancer or ulcer.

Gastric and Duodenal Ulcer

DR. JOHN B. FITTS, Atlanta: Of seventy-five cases, twenty-one were gastric and fifty-four duodenal. Fifteen patients were operated on and fifty-eight were treated medically. Two remained untreated. In the majority of the cases a history of oral sepsis or tonsillar infection was given. Of the fifteen operative cases, on dismissal ten patients showed improvement and two were unimproved; three died. Of the fifty-eight medical cases, on discharge fifty-five patients were improved and one unimproved; two died. From this study I believe that peptic ulcer is too frequently diagnosed when the actual pathologic condition is elsewhere. It is often overlooked in atypical cases. There is a necessity for the recognition of an associated appendical and gallbladder disease. The importance of preexistent focal infection and colon stasis must be recognized. The best treatment is evolved by the identification of certain selected types with their individual requirements.

Prostatic Surgery

DR. J. W. SHEARSON, Statesboro: The secret in a successful operation is long drainage; patients are not drained long enough to get in good physical condition. If, instead of allowing a week or ten days, we should allow a month or longer in some cases, the mortality would be lower. The second stage should be done under sacral anesthesia, a quick operation being aimed at. The prostatic pouch in all cases should be packed with petrolatum gauze to control bleeding. The postoperative treatment consists mainly in forcing fluids, and all the packing should be out on the fifth day, with the patient out of bed as soon as possible. A large sound should be passed at the end of the third week to prevent undue contraction of the prostatic capsule. The prostate should always be subjected to a thorough pathologic examination, for about 7 per cent of cases are malignant.

Clinical Results Attained in Five Thousand Nonsurgical Gall Tract Drainages

DR. GEORGE M. NILES, Atlanta: The drainages varied in number from three to more than sixty-five, the largest number being in migraine, bronchial asthma and arthritis. Forty-one of the patients had previously undergone surgical gallbladder drainage, and five had had the gallbladders removed. In the cases of cholecystitis and choledochitis, definite, and to the patients, satisfactory results were attained in 65 per cent; fairly good results in 15 per cent; unsatisfactory results in 5 per cent, while about 15 per cent could not be followed up. In three of thirty cases of probable gallstones, there was a severe colic after the drainage, followed by a complete and permanent cessation of pain. In one case a large gallstone was passed. Four of these colic patients were not helped and were later operated on. Eight reported relief from pain for from one to three years. The others, with six exceptions, still report for drainage occasionally. Four of the eighteen bronchial asthma patients were not aided, but the others experienced marked relief. Four of these are still undergoing treatment occasionally. All of the twenty-nine arthritis patients who could receive prolonged treatment obtained a liberal measure of relief. The same may be said of the nineteen sufferers from migraine, for in no instance in which quite a number of drainages could be administered has there been a complete failure. All of the twenty-one patients with catarrhal jaundice were relieved, except one, and in this case a certain amount of bile was obtained, though to date the jaundice persists. The aged patient with probable malignant disease were accepted for treatment as a last resort, for surgery was absolutely contraindicated in all of them. Little bile was obtained and the results were nil. The assumption that this method will remove gallstones, will break up adhesions, will cure appendicitis or cancer of the liver, or remove deep seated organic pathologic changes in the gallbladder and ducts is ridiculous, and the patients should be so informed. No physician should use this method unless he goes into it wholeheartedly, performing it in a technically correct manner and is willing to persevere in his efforts. The method is harmless, painless and entails a minimum of inconvenience and expense.

The Specific Treatment of Malaria

DR. C. C. BASS, New Orleans: The purpose of treatment of malaria is, first, to relieve the clinical symptoms and, secondly, to cure the infection so as to prevent relapse and transmission of the disease to others. The only specific remedy we now possess for malaria is quinine and, to some extent, certain other cinchona alkaloids. Patients frequently improve and sometimes get well while under treatment with other drugs and remedies, chiefly certain arsenicals, but none of these compare in specificity or effectiveness with quinine. Quinine is effective in all cases when given in sufficient doses for a sufficient length of time. There are no exceptions. The amount of quinine necessary to relieve clinical symptoms varies in individuals. We have no way of knowing in advance the minimum dose that will control the clinical symptoms in a given case. It is necessary, therefore, to employ doses known to be effective in all cases. Although 10 or 20 grains (0.65 or 1.3 Gm.) of quinine will control the clinical symptoms in nearly all cases, some patients require more. Thirty grains (2 Gm.) of quinine daily will control the clinical symptoms in all cases within a period of from one to three or four days. There is no necessity to give a larger amount or to give it for a longer period for the purpose of controlling the active clinical symptoms. After the clinical symptoms have been relieved, the patient is usually still infected and will relapse in from a few days to a few weeks or a month in most cases unless quinine treatment is continued long enough to cure the infection. The period necessary to cure the infection varies in different patients, and there is no way of knowing in advance whether a given person will require a long or a short period of treatment. Therefore, it is necessary to adopt a period that will cure a satisfactorily large proportion of cases. Ten grains of quinine daily cures the infection in from 90 to 95 per cent of cases. The specific treatment recommended is 10 grains of quinine sulphate by mouth, three times a day, for a period of three or four days to control the active clinical symptoms, to be followed by 10 grains every night before retiring for a period of eight weeks to cure the infection.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Psychiatry, Baltimore

5: 469-690 (April) 1926

Influenza and Schizophrenia: Postinfluenzal "Dementia Praecox," as of 1918, and Five Years Later; Psychiatric Aspect of Influenza. K. A. Menninger, Topeka, Kan.—p. 469.
Personality Changes and Upheavals Arising Out of Sense of Personal Failure. A. T. Boisen, Worcester, Mass.—p. 531.
Eye Motif in Delusion and Fantasy. P. Greenacre, Baltimore.—p. 553.
Reactions to Intensive and Systematic Community Service Program. J. A. Jackson and H. V. Pike, Danville, Pa.—p. 581.
Circulatory Ratings in Mentally Defective Adolescent Children. P. J. Trentzsch, Boston.—p. 593.
Psychiatry and Psycho-Analysis. C. P. Oberndorf, New York.—p. 605.
Use of Behavior Chart in Preschool and Kindergarten Clinics. S. Blanton, Minneapolis.—p. 615.
What Mental Hygiene Movement Has Meant in Missouri. M. A. Bliss, St. Louis.—p. 625.
Paresis in Negro. R. H. Foster, Pineville, La.—p 631.
Methods of Limiting Changes in Hospital Personnel. C. H. Anderson, Anna, Ill.—p. 641.
Obsessions in Their Relation to Psychoses. A. Gordon, Philadelphia.—p. 647.

American Journal of Syphilis, St. Louis

10: 201-372 (April) 1926

*Conjugal Syphilis of Nervous System. A. Gordon, Philadelphia.—p. 201.
Recurrent Early Syphilis. C. C. Dennie, Kansas City, Mo.—p. 205.
*Study of Testes from Syphilitic Patients. E. R. Saleeby, Philadelphia.—p. 215.
*Generalized Cutaneous Syphilis. IV. *Palmar Secondary Syphilid.* H. Goodman, New York.—p. 222.
Treatment of Central Nervous System Syphilis. F. J. Farnell, Providence, R. I.—p. 236.
Treated and Mistreated Syphilis. A. B. Jackson, Washington, D. C.—p. 246.
Rectal Pathology Caused by Syphilis. J. F. Montague, New York.—p. 254.
*Tryparsamide in Treatment of Neurosyphilis. L. Berg, New York.—p. 261.
Newer Viewpoints in Treatment of Syphilis. M. Scholtz, Los Angeles.—p. 273.
Significance of Incomplete Wassermann Reaction. J. S. Lawrence, Albany, N. Y.—p. 292.
Vernes Flocculation Test as *Accessory Serologic Guide in Combat Against* Syphilis. A. B. Baylis, A. E. Sheplar and W. J. MacNeal, New York.—p. 298.
Treponema Pallida Antigens in Wassermann Reaction. A. J. Hinkleman, *Oklahoma City.*—p. 338.

Conjugal Syphilis of Nervous System.—In summing up the subject of conjugal syphilis of the nervous system, Gordon says, it must be admitted that several etiologic elements should be taken into consideration. First, the clinical and experimental evidences favor the conception of a special neurotropic virus different in its character from the dermotropic virus. Second, there is a special innate predisposition for organic alteration of the central nervous system. Third, the intensity of the use or overfatigue of the cerebral centers or of the spinal axis should be noted. Fourth, conjugal neurosyphilis includes not only the parenchymatous forms (tabes, general paralysis) but also the vascular or meningeal type in which the nervous disturbances appear secondarily.

Study of Testes of Syphilitic Patients.—The testes from forty syphilitic human subjects were studied by Saleeby grossly and histologically. In addition to the varying degrees of fibrosis there were, grossly, no characteristic changes. Microscopically, twenty-three cases showed pathologic changes commonly attributed to *Spirochaeta pallida* infection. In seventeen of these twenty-three cases, the Wassermann reaction was positive; in two, negative, and in four, not made. The Levaditi preparations were negative for the organism in all the cases, except in a 7 months' fetus, in which the spirochetes were demonstrated in large number. Eight rabbits were injected, intratesticularly, with emulsions from eight cases and were observed for four months. None of the rabbits developed syphilomas. The findings in this study tend to show the frequency of the disease in the testes and the difficulty of demonstrating the organism in the tissues with our present methods and present knowledge of its morphology.

Palmar Syphilis.—Goodman finds it difficult to differentiate arsenical keratosis from palmar syphilis of the tertiary period. Secondary palmar and plantar lesions do not resemble the keratosis of arsenic.

Tryparsamide in Treatment of Neurosyphilis.—Observation for a fairly long period has convinced Berg of the value of tryparsamide in producing clinical improvement in more than 40 per cent of patients selected without any particular care to take only those which would be most favorably influenced by treatment, observing only the precautions not to take those susceptible to optic nerve injury. In addition, he has found another 50 per cent at least moderately improved by treatment.

Annals of Clinical Medicine, Baltimore

4: 613-694 (Feb.) 1926

Hemorrhagic Processes in Thyroid. M. Ballin and P. F. Morse, Detroit.—p. 615.
*Exophthalmic Goiter and Tuberculosis. J. H. Musser, New Orleans.—p. 620.
Inflammations of Thyroid. J. T. Watkins, Detroit.—p. 628.
*Malignant Neoplasms of Thyroid. W. M. Simpson, Ann Arbor, Mich.—p. 643.
*Primary Thyroid Carcinoma Simulating Hypernephroma. W. M. Simpson, Ann Arbor, Mich.—*p. 668.*
Medical Treatment of Hyperthyroidism. H. M. Clute and R. L. Mason, Boston.—p. *673.*
*Accidental Perforation of Atlanto-Occipital Membrane. A. T. Henry, Toronto.—p. 682.

Exophthalmic Goiter and Tuberculosis.—In the ordinary case of tuberculosis and exophthalmic goiter, Musser says there would be little trouble in differentiating the two conditions, but in many a case of tuberculosis there is an enlargement of the thyroid and many of the symptoms of hyperthyroidism which present real diagnostic difficulties. In such a case, Musser believes it is wise to consider the patient tuberculous until proved otherwise.

Malignant Neoplasms of Thyroid.—A clinical and pathologic study was made by Simpson of fifty-five cases of thyroid malignancy. Fifty were carcinomas; five were sarcomas. Over 60 per cent of this series were unsuspected carcinomas, the correct diagnosis being made only after histologic examination. Clinical signs of hyperthyroidism were present in approximately one half of the carcinoma cases. Simpson says that every hard nodule in the thyroid gland of a person above 30 should be viewed with suspicion as regards malignancy. The frequency with which signs of hyperthyroidism are likewise present provides a second excellent reason for their surgical removal. The most important clinical evidence of an early malignant condition is a history of relatively rapid increase in size and hardness in a previously quiescent or slowly growing goiter, particularly in a person above 30 years of age. Radiating neuralgic pain is a common early symptom. Metastasis is common in the advanced stages. The lungs are most often involved, while bone metastases are next in order of frequency. Many thyroid carcinomas are of unusually slow growth. The traditional five-year "danger period" is insufficient. Recurrence after five years is common.

Primary Thyroid Carcinoma.—Simpson points out that there is a form of primary thyroid carcinoma which possesses some of the histopathologic characteristics of hypernephroma.

Perforation of Atlanto-Occipital Membrane.—Henry emphasizes the fact that the relatively undefended atlanto-occipital space now employed for cisterna puncture may assume grave clinical and medicolegal aspects in relation to accidental or homicidal puncture wounds. In the case cited, a wire accidentally penetrated the cranial cavity at this point and almost completely destroyed the right side of the medulla at about the level of the lower end of the olivary body. The boy died within a few minutes after the accident.

Archives of Pathology and Laboratory Medicine, Chicago

1: 681-846 (May) 1926

*Liver Function Tests. F. C. Mann and J. L. Bollman, Rochester, Minn. —p. 681.
*Bilharzia Infection in Apparently Normal Appendix. A. Plaut, New York.—p. 711.
*Generalized Torula Mycosis. B. Z. Rappaport and B. Kaplan, Chicago. —p. 720.
*Instantaneous Photomicrography of Blood Platelets. R. Rockwood and C. Sheard, Rochester, Minn.—p. 742.
Significance of Variations of Bilirubinemia. A. R. Bernheim, New York. —p. 747.
Opportunities for Clinician and Pathologist Offered by Study of Human Constitution. G. Draper, New York.—p. 759.
Value of Kahn Test as Applied to Contaminated Arachnoid Fluids. L. O. Dutton, Memphis, Tenn.—p. 766.
Pathology of Burns. G. T. Pack, Tuscaloosa, Ala.—p. 767.

Liver Function Tests.—The most important of the tests suggested for measuring hepatic function have been studied by Mann and Bollman in normal animals, animals with an Eck fistula, animals with permanently reduced amounts of hepatic tissue and animals with the liver completely removed. In summarizing the results of the experiments, as they would appear to apply to the clinical tests of hepatic function, the following dictums are suggested: There appears to be no physiologic basis for many of the tests employed to measure the functional capacity of the liver. So far as carefully controlled experimental data may apply to such problems, most of the tests should be discarded. Some of these tests, which could not be proved experimentally to have any value in a known and controlled condition of hepatic deficiency, may be of value clinically, either because they are an index of disease, not necessarily wholly hepatic, or because spontaneous disease of the liver may affect the function differently from experimental procedures, or because man may be somewhat different from the dog. However, the value of such tests should be accepted only with data obtained in cases in which the hepatic disease is proved either by a definite clinical diagnosis or anatomically at operation or necropsy.

Bilharzia in Appendix and Uterus.—Plaut found bilharzia ova not only in the wall of the appendix but in the cervix uteri and in the feces. The patient had been operated on for a retroversion of the uterus. She had complained of backache and a vaginal discharge.

Generalized Torula Mycosis.—Rappaport and Kaplan relate the case of a man, aged 54, who complained of severe headache and a feeling of intense weakness and chilliness. The symptoms manifest and the presence of numerous yeastlike organisms and some budding, led to the diagnosis of coccidioidal meningitis. Cultures of the spinal fluid revealed a torula-like organism. Cultures from the right nasopharynx and from a skin lesion likewise contained the same organism with no other yeastlike growth. The man died. The necropsy revealed that the primary lesion in this case was probably in the lung, there being most likely a mixed infection of *Torula histolytica* and an oidium-like organism. The patient also had tuberculosis involving the apexes of both lungs and of the middle right lobe. Some months before death, *Torula histolytica* became generalized, producing meningitis; or possibly first a sphenoidal sinusitis from which the meningitis developed. This was followed by a generalized torula mycosis involving many organs. The portal of entrance was in all probability the respiratory tract. This is said to be the first case in which the skin was involved. For the first time definite immunologic reactions were developed in experimental animals, as shown by agglutination, absorption, and complement fixation tests.

Photomicrography of Blood Platelets.—Rockwood and Sheard describe: (1) simple and inexpensive pieces of apparatus and their ensemble, whereby photomicrographs of the blood platelets may be obtained with periods of exposure varying from one-half to one-fifth second, under a magnification of about 1,900; (2) the morphologic changes in the blood platelets, both immediately prior to and immediately after splenectomy, and the return of the platelets to a normal condition some months after splenectomy in a case of hemorrhagic purpura; and (3) the value of careful morphologic studies of the platelets in cases of purpura, and those that require differentiation from it.

Archives of Surgery, Chicago

12: 949-1104 (May) 1926

*Pneumocephalus (Intracranial Pneumatocele or Aerocele). W. E. Dandy, Baltimore.—p. 949.
*Treatment of Old Congenital Dislocation of Hip. L. C. Abbott, St. Louis.—p. 983.
*Influence of Decompression Operations on Experimentally Produced Papilledema. L. Davis, Chicago.—p. 1004.
*Three Tumors Arising from Neuroblasts. W. Boyd, Winnipeg, Canada. —p. 1031.
*Fractures of Head of Femur. F. Christopher, Chicago.—p. 1049.
*Tetanus. J. M. Wainwright, Scranton, Pa.—p. 1062.
*Treatment of Experimental Peritonitis by Mercurochrome 220 Soluble Alone or in Conjunction with Hypertonic Dextrose Solutions. A. M. Willis and C. C. Haskell, Richmond, Va.—p. 1080.

Pneumocephalus.—Twenty-eight cases of pneumocephalus, including three of his own, have been compiled by Dandy from the literature and analyzed. The symptoms are mainly those of increased intracranial pressure. Frequently, symptoms follow weeks or even months after a trivial injury of the head. A discharge of cerebrospinal fluid is usually present; its presence should always make one suspect pneumocephalus. Sneezing is a frequent symptom. Rhinorrhea after sneezing or after change of position is almost pathognomonic of this condition. The absolute diagnosis is made by the roentgen ray. When left to chance, the mortality of pneumocephalus is around 40 per cent, infection and pressure being the causes of death. For fistulas through the frontal sinuses, an operative treatment is proposed. The dural tear is located and covered by a transplant of fascia lata, which is carefully sutured in place.

Treatment of Old Congenital Dislocation of Hip.—In old congenital dislocations of the hip, Abbott says, it is difficult to secure reduction by the usual methods of treatment because of the marked pathologic changes that have taken place in the joint. Skeletal traction is effective in stretching the contracture of the soft parts and bringing the head of the femur to the level of the acetabulum. Reduction can then be secured by operation. In a series of five successful reductions, the functional result judged from the standpoint of stability, the increased length of the leg and the improvement in gait was much the best in the cases in which a bony ankylosis in good position for weight bearing was obtained.

Influence of Decompression Operations on Experimental Papilledema.—The importance of the mechanical factor of an increase in intracranial pressure in the production of papilledema has been corroborated by Davis. The introduction of sterile agar into the cerebral or the cerebellar substance produces an increase in intracranial pressure which results in the production of papilledema. This method of experimentation affords a means of studying the disturbed function of the cerebrum and the cerebellum produced by the introduction of agar into the brain substance.

Neuroblastic Tumors.—In three cases of tumors occurring in children and reported by Boyd, one tumor arose from the suprarenal medulla, the second from the abdominal sympathetic, and the third from the retina. These three tumors, although originating from different organs and differing in their microscopic structure, nevertheless possess features in common which justify their common consideration. They may all be regarded as developmental tumors arising in children from the neuroblast at different stages of its development. In the first two cases, the spread was apparently by the lymphatics and in the third case by the blood stream. In all three cases the most striking metastases were in the cranium.

Fractures of Head of Femur.—Christopher reports what he claims to be the fifteenth case of this type on record. Previously recorded cases are reviewed.

Treatment of Tetanus.—In Wainwright's opinion, intraspinal injections of antitetanus serum are harmful, increase mortality, and should be abolished. Antitetanus serum is not useless. Given by vein in doses of from 30,000 to 50,000 units or more, according to the severity of symptoms and the time since onset, it will divide the present average mortality rate by two or three, or more. The efficiency of this dose and route will depend directly on the promptness with which it is given. If the initial dose has to be repeated, it should be of approximately the same size and by vein only. In the last days of convalescence, intramuscular injections are allowable. The best sedative is chlorbutanol, given in a dose of 30 grains (2 Gm.) dissolved in hot whisky, by mouth, or 75 grains (5 Gm.) in hot olive oil, by rectum, repeated sufficiently often to keep the patient relaxed and drowsy till the danger is passed.

Mercurochrome in Experimental Peritonitis.—The outcome of the experiments done by Willis and Haskell, in which mercurochrome-220 soluble was used alone in the treatment of experimental peritonitis, would scarcely make one infer that the drug possesses "marvelous" curative properties; nor would it lead even to the conclusion that it constitutes a "really remarkable addition to therapeutics," so far as regards this pathologic condition. It is emphasized, however, that peritonitis presents an instance of toxemia, as well as bacteremia; the advocates of mercurochrome therapy have never claimed that the drug would be efficacious against toxins. In clinical peritonitis, when the exudate is removed operatively, it is at least conceivable that the intravenous injections of mercurochrome-220 soluble would prove of more benefit than was the case in the experimental form, although the few cases already on record do not prove this. On the other hand, in a case of diffuse peritonitis, the condition is often critical, and the intravenous injection of a substance with the capabilities of doing harm to the extent that mercurochrome-220 soluble seems to have manifested on at least three occasions may actually contribute to or cause the fatal outcome.

Boston Medical and Surgical Journal

194: 913-962 (May 20) 1926

Postoperative Treatment. D. Lewis, Baltimore.—p. 913.
*Surgical Convalescence: Medical Aspects. J. Bryant, Chicago.—p. 920.
*Changing Conception of Diabetes as Disease. G. H. Tuttle, South Acton, Mass.—p. 931.
*Cumulative Immunity from Hay-Fever Preventive Inoculations. A. G. Gould, Ithaca, N. Y.—p. 932.

Surgical Convalescence.—Bryant points out that authoritative proof indicates that the normal duration of convalescence, both medical and surgical, averages six weeks. To date, it is not within the power of the physician or surgeon to decrease below this average of six weeks, the length of time necessary, with or without operation, for complete recovery of man from acute and serious illness. To send the average patient out of the hospital in the average of three weeks as cured is merely to add to the thousands of half-cured persons who today bear witness to the failure of medicine to complete its job through intelligent application of known methods of adequate convalescence care. Present surgical methods leave something to be desired, not only in the way of medicosurgical technic, but also in the utilization of known procedures that tend to promote peace of mind and bodily comfort. The surgeon could well add to his perfect technic many small refinements of medical care which tend to keep the patient comfortable and cheerful.

Conception of Diabetes.—Tuttle calls attention to the fact that most so-called diabetic deaths are not due to diabetes, but to more fatal diseases acting on a diabetic groundwork. True diabetes is primary functional diabetes and nothing else, no matter how many deaths may occur from other diseases complicating that state.

Cumulative Immunity in Hay-Fever.—Gould has made a study of the cumulative immunity in patients treated one, two and three years. Examination of the data indicates that some apparently do have a worth while cumulative immunity and others do not. Apparently the factor of the human equation is a great one in the years with and without treatments. Two persons from the same community having about the same objective degree of hay-fever are apt to show under treatment various amounts of relief even when treated with the same kind and lot of pollen extract. Two patients under similar conditions receiving about the same amount of relief from preventive inoculations are very apt to show in years without treatment different amounts of cumulative immunity. Statements to patients as to the amount and duration of the cumulative immunity should be guarded.

Colorado Medicine, Denver

23: 147-184 (May) 1926

Practical Aspects of Thoracic Tuberculosis. C. J. Lowen and I. D. Bronfin, Denver.—p. 149.
*Treatment of Diphtheria Carriers by Roentgen Rays. E. D. Humphrys, S. Withers and J. R. Ranson, Denver.—p. 159.
Thymic Enlargement. E. Friedman, Denver.—p. 164.
*Tuberculous Appendix. C. E. Tennant and W. W. Haggart, Denver.—p. 172.
Psychopathology—Thinking Disturbances. L. H. Ziegler, Denver.—p. 179.

Treatment of Diphtheria Carriers by Roentgen Ray.—Humphrys, Withers and Ranson report on thirty-nine cases of diphtheria carriers treated with very well filtered roentgen rays generated at an actual voltage of 200,000, corrected to a sea level reading. In no case was there given more than 60 per cent of an erythema skin dose, which is just sufficient to cause some dryness of the mouth, due to the effect on the parotid, and in some cases a very slight cervical lymph adenitis. Two febrile reactions have occurred simulating an acute tonsillitis. Neither lasted more than one week. Of the entire series, only four cases remained positive, eighty and eighty-five days, after the first roentgen-ray treatment.

Tuberculosis of Appendix.—Tennant and Haggart assert that tuberculosis of the appendix is more commonly a primary infection than is generally accepted. Patients suspected of having a tuberculous appendix should, as early as possible, be given a vigorous and intensive postoperative treatment for tuberculosis, the essentials of this being a good, generous and well balanced diet, rest and heliotherapy. Treatment should be continued for a minimum period of two years.

Journal of Experimental Medicine, Baltimore

43: 591-724 (May 1) 1926

Dialysability of Growth Activating Principle Contained in Extracts of Embryonic Tissues. G. P. Wright, St. Louis.—p. 591.
Relation Between Atherosclerosis and Ingested Cholesterol in Rabbit. S. Clarkson and L. H. Newburgh, Ann Arbor, Mich.—p. 595.
*Rôle of Reticulo-Endothelial System in Immunity: Production of Diphtheria Antitoxin. C. W. Jungeblut and J. A. Berlot, Albany, N. Y.—p. 613.
*Pneumococcus Growth Inhibition. V. Relation of Virulence to Pneumococcidal Activity of Normal Rabbit Serum-Leukocyte Mixtures. S. T. Woo, Peking.—p. 623.
Id. VI. Specific Effect of Pneumococcus Soluble Substance on Growth of Pneumococci in Normal Serum-Leukocyte Mixtures. R. H. P. Sia, New York.—p. 633.
*Reproduction in Vitro of Rous Virus. A. Carrel, New York.—p. 647.
Relative Reaction Within Living Mammalian Tissues. V. (a) D. R. Drury and P. Rous, New York.—p. 669.
Id. V. (b). D. R. Drury and P. Rous, New York.—p. 687.
Hyperthyroidism. III. Bile Pigment Production and Erythrocyte Destruction in Thyroid Treated Amphibian Larvae. C. C. Speidel, Charlottesville, Va.—p. 703.
Changes in Reaction Potential of Transplantable Tumor. L. C. Strong, Boston.—p. 713.

Production of Diphtheria Antitoxin.—Following massive doses of India ink injected intravenously into guinea-pigs before a subcutaneous injection of diphtheria toxin-antitoxin mixture, no antitoxin was found by Jungeblut and Berlot in the blood serum for three weeks, as indicated by intracutaneous tests, whereas an appreciable amount could be detected in nonblocked, immunized control animals. During the fourth week following immunization, the titer of the serum of blocked animals equaled that of nonblocked controls within the limits of the intracutaneous test dose. The smaller doses of India ink used in these experiments, given before immunization, had no stimulating effect on the production of diphtheria antitoxin but, on the contrary, also inhibited the appearance of this antibody, although to a less extent.

Pneumococcus Destroying Properties of Blood.—Employing a method described in an earlier publication for testing the pneumococcidal activity of serum-leukocyte mixtures, a study has been made by Woo of the pneumococcus destroying properties of the blood of a relatively susceptible animal, the rabbit, for pneumococci of low virulence for the species. It was found that rabbit serum-leukocyte mixtures possessed the power to kill avirulent pneumococci in relatively large numbers but failed to inhibit the growth of virulent organisms even in minute quantities. The results of numerous experiments in which all three types of pneumococci were employed indicated that the ability of a strain of pneumococcus to grow in rabbit blood is dependent on its virulence for the rabbit. The extreme susceptibility of the very young rabbit to strains of pneumococcus of low virulence for the full grown animal was found associated with an absence of pneumococcidal properties in the blood of the young rabbit. These findings suggest that the relatively susceptible animals possess the same type of defense mechanism against pneumococcus infection as do the highly pneumococcus resistant species.

Testing Susceptibility to Rous Virus.—A method has been developed by Carrel by which the susceptibility of chickens to Rous virus can be tested, and the virulence of eight or ten different fluids compared in a single animal. The results of five series of experiments made with this technic are reported.

Journal of Industrial Hygiene, Baltimore

8: 211-256 (May) 1926

Estimation of Permanent Disability in Industrial Accidents. H. H. Kessler, Newark, N. J.—p. 211.
Lead Anemia. M. R. Mayers, New York.—p. 222.
Lighting Post Offices. J. E. Ives and E. Sydenstricker.—p. 232.

Journal of Infectious Diseases, Chicago

38: 381-468 (May) 1926

*Hemolytic Streptococci of Beta Type in Certified Milk. J. H. Brown, W. D. Frost and M. Shaw, Madison, Wis.—p. 381.
Snuffles in Rabbits. A. Tanaka, Chicago.—p. 389.
Id. Etiology and Correlation with Experimental Pfeiffer Bacillus Pneumonia and Human Influenzal Pneumonia. A. Tanaka, Chicago.—p. 409.
Comparative Study of Pasteurella Cultures from Different Animals. A. Tanaka, Chicago.—p. 421.
Bacterial Spores. 2. Increasing Resistance to Heat Through Selection. C. A. Magoon, Washington, D. C.—p. 429.
*Bactericidal Action of Acidine Dyes and Adjuvant Effect of Serum. A. H. Eggerth, New York.—p. 440.
Effect of Suprarenalectomy on Active Anaphylactic Shock in White Rat. D. H. Flashman, New York.—p. 461.

Hemolytic Streptococci in Certified Milk.—Beta hemolytic streptococci in considerable numbers were found by Brown, Frost and Shaw in the certified milk of five dairy herds. These streptococci belonged to several distinct cultural and serologic groups. There is no evidence that any of them, whether from gargety cows or from mixed milk, are pathogenic for human beings. The causative organism of milk-borne septic sore throat is *Streptococcus epidemicus*. This streptococcus is probably of human origin but occasionally may gain entrance to the udder of a cow and find its way into the milk supply. The hemolytic streptococci commonly found in milk show distinct cultural and biologic differences from *Streptococcus epidemicus*. No single test, however, can be relied on to differentiate them. A routine procedure for the detection of *Streptococcus epidemicus* in milk is described.

Bactericidal Action of Acridine Dyes.—The results reported by Eggerth indicate that acridine dyes, especially when combined with an appropriate soap, would be useful in treating infections that do not tend to become rapidly generalized.

Journal of Nervous and Mental Disease, New York

63: 433-552 (May) 1926

Ancient Idea of Consciousness and Human Mind. J. Wright, Pleasantville, N. Y.—p. 433.
*Use of Luminal in Epilepsy. H. A. Patterson and L. A. Damon, Sonyea, N. Y., and P. Levi, Helmuth, N. Y.—p. 446.
*Vagotonia and Hypoglycemic Reactions: Seventeen Cases. J. M. Nielsen, Battle Creek, Mich.—p. 456.
Postencephalitic Respiratory Disorders. S. E. Jelliffe, New York.—p. 467.

Phenobarbital in Epilepsy.—Patterson, Damon and Levi contend that phenobarbital may be given orally, subcutaneously, intravenously, or intraspinally. No ill effects have followed the administration of therapeutic doses of this drug by any of these methods. No tolerance is developed for phenobarbital by any of the forms of treatment used. The effect of phenobarbital in epilepsy is palliative rather than curative. Sudden withdrawal of the drug is contraindicated. Treatment apparently has more influence on severe than on mild attacks. The period required for the appearance of therapeutic effects is as follows: Orally from one to two hours; subcutaneously, from fifteen to thirty minutes; intravenously, almost immediately; intraspinally, one-half hour or more. The subcutaneous method of administration is preferable in serial seizures. The employment of the intravenous method is indicated in status epilepticus. Intraspinal injection may subsequently render refractory cases more amenable to other types of treatment.

Vagotonia and Hyperglycemic Reactions.—Seventeen cases of generalized vagotonia are presented by Nielsen. It appears that vagotonia, beside occurring in psychopathic states and in neurotics, is frequently the end-result of a strenuous life. It represents a fatigue of the sympathetic nervous system and of the endocrines. Hypoglycemic reactions are very common symptoms of vagotonia and are frequently the incapacitating factor. These are usually weakness, hunger, sweating, insomnia and tremor. Vagotonia may alternate in one patient with sympathicotonia. Renal glycuresis occurs in about half the cases of this series but is not satisfactorily explained. Treatment takes considerable time. Of all therapeutic measures, rest is far more important than any other. Drug treatment is only palliative. In severe cases, the patients manifest an inversion of the law of hypertrophy—they weaken by exercise. The basal metabolism is probably at first high and then approaches zero, finally becoming very low.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

27: 181-286 (April) 1926

Persistence of Action of Physostigmine and Atropine-Physostigmine Antagonism in Animals and in Man. S. Weiss, New York.—p. 181.
Iso-Amyl Ethyl Barbituric Acid (Amytal): Intravenous Anesthetic. I. H. Page and P. Coryllos, New York.—p. 189.
Prevention of Edema of Paraphenylene-Diamine by Drugs Acting on Suprarenals. M. L. Tainter, San Francisco.—p. 201.
*Effect of Iodides on Nitrogen Partition. G. P. Grabfield and A. M. Prentiss, Boston.—p. 231.

Effects of Iodides on Nitrogen Partition.—Grabfield and Prentiss assert that the administration of iodides to normal human subjects causes no change in the nitrogen partition of blood or urine.

Medical Journal and Record, New York

123: 563-634 (May 5) 1926

Cancer Metastases and Other Distance Effects in Cancer. W. Meyer, New York.—p. 563.
*Causation of Malignant Neoplasms. J. Loudon, J. M. McCormack and N. J. Howard, Toronto.—p. 567.
Gastric Ulcer and Atomic Theory of Disease. E. McDonald and A. Godfrey, Philadelphia.—p. 570.
Physiotherapy in Hospital Team Work. N. E. Titus, New York.—p. 573.
Pernicious Anemia. L. E. Croft, Los Angeles.—p. 575.
Diagnosis and Treatment of Displacements of Semilunar Cartilages. P. Lebreton and R. M. Cleary, Buffalo.—p. 576.
Nonsurgical Constipations, Functional and Mechanical. M. Erdheim, New York.—p. 578.
Plea for Early Operation in Diseases of Gallbladder. H. Pike, New York.—p. 583.
Hypoleukocytosis Reversed by Nonspecific Protein Reaction. D. A. Bryce, Darien, Conn.—p. 584.
Experimental Investigations Into Action of Arsphenamine. J. Schumacher, Berlin.—p. 585.
Treatment of Dorsal Spinal Caries. J. B. Barnett, London.—p. 589.
Alteration of Character, Disposition and Behavior, as Sequels of Lethargic Encephalitis. A. Gordon, Philadelphia.—p. 591.
Psycho-Analytic Introduction to Study of Conduct Disorders of Lethargic Encephalitis. L. P. Clark, New York.—p. 595.
Reaction Types in Cancer. J. H. Cassity, Washington, D. C.—p. 598.
Infectious Nature of Facial Paralysis. C. B. Welton, Peoria, Ill.—p. 601.
Amnesia Following Lethargic Encephalitis. A. Sterling, Philadelphia.—p. 605.
Dioscorides and Hydrophobia. W. R. Riddell, Toronto.—p. 607.
Early Conceptions of Carcinosis. C. G. Cumston, Geneva, Switzerland.—p. 610.

Micro-Organism Found in Malignant Growth.—Loudon, McCormack and Howard aver that they have isolated a similar pleomorphic micro-organism from every type of malignant growth with which they worked, including human carcinoma, mouse carcinoma, rat carcinoma, human sarcoma, rat sarcoma (Jensen) and Rous chicken sarcoma no. I. Injections of this micro-organism into animals, with a trace of infusorial earth, produces malignant metastasizing growths. The micro-organism can again be recovered in pure culture from these primary and secondary animal growths. The pleomorphic organism described by Young and by Stearn, Sturdivant and Stearn appears to be similar to the micro-organism here described. The micrococcus isolated by Nuzum of Chicago from carcinomatous tissues and the ultramicroscopic organism described by Gye and Barnard appear to be individual stages in the life cycle of this micro-organism.

123: 635-710 (May 19) 1926

Danger of Infection Following Operations Where Eyeball is Opened. G. H. Bell, New York.—p. 635.
Acute Infectious Mononucleosis. E. Steinfield and S. Goldberg, Philadelphia.—p. 639.
Spring Hay-Fever. R. O. Clock, Pearl River, N. Y.—p. 641.
Psycho-Analytic Introduction to Study of Conduct Disorders of Lethargic Encephalitis. L. P. Clark, New York.—p. 645.
*Case of Syphilitic Epididymitis. M. B. Parounagian and J. Wittenberg, New York.—p. 648.
Cancer. V. Metastases and Other Distance Effects. W. Meyer, New York.—p. 649.
*Cause of Impotence in Male. M. Huhner, New York.—p. 651.
Dioscorides and Hydrophobia. W. R. Riddell, Toronto.—p. 655.
Oral Focal Infection as Cause of Systemic Disease. E. C. Rosenow, Rochester, Minn.—p. 657.
Extra-Oral Method of Stomatologic Roentgenography: Stereoroentgenography of Jaws and Teeth. A. Cieszynski, Lwow, Poland.—p. 661.
Problem of Modern Stomatologic Education. J. Szabo, Budapest, Hungary.—p. 666.
Stomatology in Italy. A. Beretta, Bologna.—p. 668.
Diseases of Mouth—Domain of Stomatology. J. C. Bloodgood, Baltimore.—p. 669.
Radical Surgical Treatment of So-Called Pyorrhea Alveolaris and Other Diseases of Mouth. R. Neumann, Berlin.—p. 671.
Present Educational Status of Stomatology in Italy. G. Coen-Cagli, Rome.—p. 674.
Hygienic Dentistry—Is Dentistry to Become Specialty of Medicine? G. R. Satterlee, New York.—p. 676.
Food Education Society of England. C. E. Hecht, London.—p. 678.
Problem of Dental Education in France. A. Herpin, Paris.—p. 679.
Relation of Nutrition to Stomatology. R. H. Rose, New York.—p. 680.
Doctor Intrudes on Domain of Dentistry. W. D. Bayley, Philadelphia.—p. 683.
Approach to Study of Pyorrhea Alveolaris. A. J. Asgis, New York.—p. 685.
Uses and Therapeutic Value of Yeast and Dried Brewers' Yeast. C. F. Newton, New York.—p. 689.

Bilateral Syphilitic Epididymitis.—Parounagian and Wittenberg report a case of bilaterial syphilitic epididymitis without involvement of the testes proper. On one side the syphilitic infiltration was limited to a small nodular mass in the tail of the epididymis.

Cause of Impotence.—Lack of knowledge of how to perform the coital act properly is given by Huhner as a very common cause of impotence.

Radiology, St. Paul

6: 365-456 (May) 1926

Surgical Treatment of Goiter. G. W. Crile, Cleveland.—p. 365.
Id. Indications. F. H. Lahey, Boston.—p. 368.
Diagnosis of Thyroid Toxicity and Clinical Use of Basal Metabolism Test: Thyroid Heart. B. E. Hamilton, Boston.—p. 372.
Thyroid in Relation to "Toxic Goiter." A. Graham, Cleveland.—p. 377.
*Roentgen-Ray Therapy of Exophthalmic Goiter. E. L. Jenkinson, Chicago.—p. 380.
Roentgen-Ray Treatment of Choice for Toxic Goiter. K. Dunham, Cincinnati.—p. 386.
*Radiotherapy of Metastatic Tumors in Chest. P. F. Butler and J. E. Habbe, Boston.—p. 400.
Newer Clinical Aspects of Gastric Carcinoma. G. B. Eusterman, Rochester, Minn.—p. 409.
*Roentgen-Ray Diagnosis of Pulmonary Tuberculosis in Children. J. D. MacRae, Asheville, N. C.—p. 417.
Radioactive Substances: Radium Treatment of Rectal Carcinoma. J. Muir, New York.—p. 419.
Ready Reference Tables for Superficial Roentgen-Ray Therapy. H. N. Beets and R. A. Arens, Chicago.—p. 424.
One Hundred Milliampere, Three-Tenths of Second Technic. E. C. Jerman, Chicago.—p. 426.
Bile Duct Obstruction Demonstrated by Sodium Tetraiodophenolphthalein Method. J. H. Fitzgibbon, Portland, Ore.—p. 429.
Unusual Bone Formation in Pelvis: Case. H. S. Hunsberger, San Francisco.—p. 431.
Cooling the Developer. J. A. Herring, St. Petersburg, Fla.—p. 431.
Roentgen-Ray Findings in Case of Appendiceal Abscess of One Year's Duration. I. Schwartz, New York.—p. 432.

Roentgenotherapy of Exophthalmic Goiter.—In Jenkinson's opinion, all cases of exophthalmic goiter without pressure symptoms should be treated by means of the roentgen ray. Most of these cases can be cured by such treatment. Previous operation is no contraindication for roentgen-ray therapy. Jenkinson says that any hyperfunctioning thyroid should be treated by irradiation. The results are not as conclusive as in the exophthalmic type, but a great many patients can be cured. Patients with a metabolic rate of 25 or less should be kept under observation before treatment. The amount of irradiation necessary is determined by the metabolic rate. Patients should be examined at intervals following treatment and checked by basal metabolism determination.

Radiotherapy of Breast Tumor Metastases.—Butler and Habbe feel that not all cases of metastatic malignant disease in the chest are suitable to treatment by irradiation, but when the indications are favorable, marked ameliorations of symptoms and temporary remission of the disease can usually be accomplished.

***Roentgen-Ray* Diagnosis of Pulmonary Tuberculosis in Children.**—MacRae urges a study of the infant chest with roentgen rays because it will demonstrate all but the most minute tuberculous lesions in the lungs of these little patients.

South Carolina Medical Association Journal, Greenville

22: 99-118 (May) 1926

Evolution of Modern Treatment of Diseases of Gallbladder. S. McGuire, Richmond, Va.—p. 101.
Surgical Phase of Intestinal Intussusception in Infancy and Childhood. S. E. Harmon, Columbia.—p. 107.

Southern Medical Journal, Birmingham, Ala.

19: 325-412 (May) 1926

*Differentiation of Aplastic Anemia and Essential Thrombocytopenia. J. B. McElroy, Memphis, Tenn.—p. 325.
*Bronchial Asthma in Children. W. M. Taylor, Oklahoma City.—p. 330.
Progress in Roentgenology. H. E. Ashbury, Baltimore.—p. 334.
Peptic Ulcer Question. R. T. Wilson, Temple Texas.—p. 340.
Surgeon in Bondage. J. E. Thompson, Galveston, Texas.—p. 343.
Osteomyelitis. M. L. Klinefelter, St. Louis.—p. 347.
Compulsory Reporting of Abortions. J. G. Dempsey, New Orleans.—p. 350.
Urologic Problems in Children. J. R. Caulk, St. Louis.—p. 351.
Treatment of Gonorrhea in Women. M. Y. Dabney, Birmingham, Ala.—p. 357.
*Gastro-Intestinal Disturbances in Infants as Result of Streptococcus Infection in Ears. A. M. Alden, St. Louis.—p. 360.
*Malaria Control. W. E. Deeks, New York.—p. 363.
Impounded Waters and Malaria. T. H. D. Griffiths, Montgomery, Ala.—p. 367.
Malaria Problem of Today. F. L. Hoffman, Newark, N. J.—p. 370.
Opportunities for Progress in Malaria Elimination. H. W. Van Hovenburg, Texarkana, Texas, and J. A. LePrince, Memphis, Tenn.—p. 371.
Prevalence of Malaria (1925) in Parts of Delta of Mississippi and Arkansas: Economic Conditions. M. A. Barber, W. H. Komp and T. B. Hayne, Greenwood, Miss.—p. 373.
Bird Malaria. R. W. Hegner, Baltimore.—p. 377.
*Treatment of Malaria with Stovarsol. C. C. Bass, New Orleans.—p. 381.
*Intensive Quinine Treatment Under Field Conditions. R. K. Collins, Leesburg, Ga.—p. 383.
Significance of Data Collected by Splenic Surveys. M. F. Boyd, Leesburg, Ga.—p. 392.
Malaria Activities. J. A. Ferrell, New York.—p. 396.
Malaria Control Activities in Alabama. S. W. Welch, Montgomery.—p. 397.
Id. Arkansas. C. W. Garrison, Little Rock.—p. 399.
Id. Florida. F. A. Brink, Jacksonville.—p. 400.
Id. Louisiana. O. Dowling, New Orleans.—p. 400.
Id. Mississippi. F. J. Underwood, Jackson.—p. 401.
Id. Missouri. J. Stewart, Jefferson City.—p. 402.
Id. North Carolina. H. A. Taylor, Raleigh.—p. 403.
Id. South Carolina. J. A. Hayne, Columbia.—p. 403.
Id. Tennessee. E. L. Bishop, Nashville.—p. 404.
Id. Virginia. E. G. Williams, Richmond.—p. 405.
Id. Texas. H. O. Sappington, Austin.—p. 406.
Id. Illinois. I. D. Rawlings, Springfield.—p. 407.

Aplastic Anemia and Essential Thrombocytopenia.—McElroy defines these two conditions as follows: Aplastic *anemia* is a severe myelopathy with deficient regeneration of the blood elements, characterized in many cases by extreme pallor of the skin, hemorrhages from the mucous membranes, petechiae and ecchymoses, absence of splenic enlargement, diminished hemoglobin metabolism, absence of plastic changes in the red blood cells, leukopenia and relative lymphocytosis, pronounced thrombocytopenia with lack of reaction from epinephrine and splenectomy, Rumpel-Leed's phenomenon, prolonged bleeding time, nonretractility of clot, reduced bilirubinemia and aplastic bone marrow, which resists all forms of treatment and in which splenectomy is positively contraindicated. Essential thrombocytopenia is a thrombolytic purpura, differing from the foregoing in periodic occurrences of hemorrhages from the mucous membranes, frequently enlarged spleen, normal hemoglobin metabolism, presence of plastic changes in the red blood cells, increase of blood platelets after epinephrine and splenectomy, and a variegated bone marrow, which is often benefited and frequently cured by splenectomy.

Bronchial Asthma in Children.—A family history of allergy was obtained by Taylor in 64.8 per cent of cases; 44 per cent of the children began having asthma before the age of 5. Animal emanations, as a protein group, were the most common cause of asthma. Pollens ranked second. Few cases of asthma were directly due to infected tonsils or paranasal sinuses. Asthma in children under 10 years of age is frequently atypical, compared with adult asthma.

Gastro-Intestinal Disturbances and Ear Infections.—Alden says that, in reviewing the histories of fifty-eight cases of athrepsia and anhydremia, it was found that all but two showed a definite infection outside the intestinal tract. The most common infection was otitis media, which was present in fifty-one cases. Pneumonia occurred in eighteen cases. Other infections which were present in a smaller number of cases were measles, pyelitis, furunculosis, chickenpox and congenital syphilis. Of these fifty-eight children, thirty-eight died.

Malaria Control.—Deeks places reliance on quinine in some form for the cure of acute malaria. In chronic relapsing malaria, better results are obtained by combinations of quinine, arsenic, iron and strychnine than from quinine alone. All complications or debilitating conditions associated with chronic malaria must receive appropriate treatment in order that optimal results may be obtained. In communities in which it is impracticable to destroy all breeding places of *Anopheles* mosquitoes, Deeks says, it is possible to contend satisfactorily with the malaria problem only by educating the entire population to such an extent that they will realize the necessity of maintaining properly screened quarters and remaining in them during the hours between sunset and sunrise. Screened buildings should be provided for all those engaged in night work, and also for evening public gatherings of all kinds. The holding of public gatherings in the open after sunset should be prohibited. Every effort should be made to detect and cure persons infected with chronic malaria, as the elimination of these carriers will break the cycle of infection and, hence, will assist materially in reducing the malaria rate in the community.

Treatment of Malaria.—Observing two patients treated with full doses of stovarsol, Bass did not find any evidence that it has any effect whatever on the symptoms or parasites in quartan malaria. On the other hand, benign tertian symptoms and parasites disappeared while a patient was under treatment with stovarsol, and this may have resulted from the treatment given. Stovarsol in this case of tertian malaria and in other published cases seems to have an effect equal to, but by no means superior to, that of quinine in controlling the active symptoms and the parasites.

Intensive Quinine Treatment of Malaria.—During 1924 and 1925 an experiment was carried on in Terrell County, Georgia, for the purpose of observing the value of quinine in the treatment of chronic malaria. The method of treatment was based on the so-called Bass, or standard, treatment recommended by the National Malaria Committee. The quinine was administered in syrup of yerba santa. Two suspensions were made. One suspension contained 4 grains (0.26 Gm.) of quinine to the drachm and the other 6 grains (0.4 Gm.) to the drachm. The daily dose varied from 2 grains (0.13 Gm.) for a child under 2 years of age to 8 grains (0.52 Gm.) for a child from 11 to 14 years of age. The use of the standard treatment as recommended is of definite benefit during its administration, but it has been shown insufficient to effect a cure in chronic cases. To be effectively administered, the method demands strict and expensive supervision. Therefore, the experiment would seem to indicate that the standard treatment cannot be recommended as a public health measure.

United States Veterans' Bureau Medical Bulletin
Washington, D. C.

2: 435-549 (May) 1926

*Tryparsamide in Treatment of Neurosyphilis. C. A. Neymann and D. E. Singleton, Maywood, Ill.—p. 435.
*Mercurochrome Intravenously. C. D. Allen, Memphis, Tenn.—p. 443.
*Treatment of Chronic Amebic Dysentery and Ameba Carriers with Stovarsol. C. H. Harrison, Memphis, Tenn.—p. 447.
Comparative Value of Wassermann and Kahn Tests: Five Hundred Cases. A. Lederer, Maywood, Ill.—p. 456.
*Deflation of Pleural Cavity in Treatment of Spontaneous Pneumothorax. W. H. Watterson, Maywood, Ill.—p. 467.
Instability of "Colloids" and Complement Fixation Reaction in Tuberculosis. L. R. Jones, Castle Point, N. Y.—p. 474.
Ocular Manifestations of Multiple Sclerosis. B. B. Rowley, Milwaukee.—p. 481.
Receiving Service of Neuropsychiatric Hospital. C. E. Sisson, Camp Custer, Mich.—p. 485.
Tuberculosis Examiner of Regional Office: His Duties, Responsibilities and Opportunities. H. Freed, San Antonio, Texas.—p. 488.
Dental Hygiene. J. W. Bleasdale, Livermore, Calif.—p. 493.
Case of Sickle Cell Anemia. J. F. Hamilton, Memphis, Tenn.—p. 497.
Case of Hydronephrosis with Rupture into Peritoneal Cavity. C. R. Miller, New York.—p. 500.
Treatment of Chronic Ulcer with Cargile Membrane. D. R. Scott, Maywood, Ill.—p. 503.

Tryparsamide Treatment of Neurosyphilis.—Fifty patients with syphilis of the central nervous system have been treated by Neymann and Singleton with tryparsamide. Deteriorated cases are not favorably influenced by the use of the drug. About 50 per cent of the patients improved or recovered. It is usually necessary to give at least three courses before any positive results can be expected. Parenchymatous syphilis of the central nervous system responds to tryparsamide therapy more favorably than the mesoblastic type. Eye complications in properly controlled cases are not of serious import.

Use of Mercurochrome Intravenously in Urology.—Allen is of the opinion that in infections of the genito-urinary tract and in chronic arthritis, either gonorrheal or of other origin, there is a definite indication for the use of mercurochrome-220 soluble intravenously. Further, that as a systemic tonic and cholagogue, mercurochrome stands first on the list, and if given a fair trial along with other forms of treatment, will be a distinct addition to the armamentarium of general therapeutic agencies. Allen uses a cold filtered, 2 per cent mercurochrome solution, obtained by adding mercurochrome to cold distilled water. He starts with 2 or 3 cc. of a 2 per cent solution and increases 1 cc. each dose up to 5 cc., unless there is some imperative need for a larger dose. Thus undesirable reactions are avoided. Only one case of kidney irritation has been encountered among hundreds of patients treated.

Stovarsol in Amebic Dysentery.—Harrison reports good results from the use of stovarsol in the treatment of amebic dysentery. He administers 0.5 Gm. by mouth, three times daily. Colonic irrigation with from 4,000 to 8,000 cc. of physiologic sodium chloride solution, followed by 1:500 mercurochrome, are routine procedures in these cases.

Deflation of Pleural Cavity in Spontaneous Pneumothorax.—Relief of spontaneous pneumothorax symptoms by deflation of the pleural cavity, in Watterson's opinion, is the treatment that should be instituted as soon as symptoms call for it. Deflation should be done slowly, and sufficient air should be removed to relieve the patient, but no more, especially in cases in which therapeutic collapse has been instituted. Complete deflation is not necessary nor advisable. The remaining air will absorb quickly or, in therapeutic pneumothorax, may replace a treatment. Coincident rather than resultant rupture of the visceral pleura during artificial pneumothorax treatment is probable in many cases. When the manometric reading is 0 to 0 at the end of the treatment, unless this is the result of fluid in the needle, the prognosis is bad.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 891-928 (May 29) 1926

*Therapeutic Action of Ultraviolet Light on Eye. W. S. Duke-Elder.—p. 891.
*Death from Fulminating Pneumonia After Brief Nitrous Oxide Anesthesia. E. Glynn.—p. 895.
*Treatment of Diabetes Mellitus. H. Chabanier and W. S. C. Copeman.—p. 897.
Case of Patent Ductus Arteriosus. W. Gordon.—p. 898.
*Mental Condition Nine Years After Meningitis Treated by Frequent Ventricular Puncture. H. H. C. Gregory.—p. 899.
Hydatid Cyst of Orbit: Removal of Cyst; Preservation of Eye and Vision. E. A. Scale.—p. 900.
Abdominal Cases Illustrating Important Surgical Principles. J. L. Stretton.—p. 901.
*Pernicious Anemia Following Intestinal Obstruction Due to Stasis. C. L. G. Chapman and S. E. Duff.—p. 902.
Relationship of Herpes Zoster and Chickenpox. L. E. G. de Woolfson, W. H. Smith and H. Distin.—p. 902.
Pulmonary Tuberculosis in Old Age. L. S. T. Burrell.—p. 902.
Septic Sore Throat Complicated by Erythema Nodosum. E. Shepheard.—p. 902.

Effect of Ultraviolet Rays on Eye.—Duke-Elder uses ultraviolet rays applied either as general baths of the body generally, or locally to the eye itself. Good results have been obtained in cases of ocular tuberculosis in any of its forms and phlyctenular ophthalmia, infective iridocyclitis, sympathetic ophthalmitis, choroiditis, chronic blepharitis, chronic catarrhal conjunctivitis, trachoma, vernal catarrh, corneal ulcers, hypopyon ulcer, corneal opacities, phlyctenular keratitis, acne, episcleritis, choroiditis and chorioretinitis. Interstitial keratitis is little influenced by either general or local treatment, although the photophobia is relieved, and the general condition much improved. A bibliography of the literature of ultraviolet therapy in ophthalmology is appended.

Death from Fulminating Pneumonia.—An apparently healthy lad was anesthetized with nitrous oxide, and the stumps of a molar tooth were extracted. He did not regain consciousness. His temperature rose to 102 F.; then epileptiform convulsions occurred, and finally acidosis and hyperpyrexia. He died of pneumococcal lobar pneumonia thirty-seven hours after the anesthetic. The bases of both lungs showed early red hepatization; the pneumococcus was of group IV and therefore probably an autogenous infection. Glynn is of the opinion that most probably the pneumonia had begun at the time of the anesthesia, especially as the patient was indisposed two days before.

Treatment of Diabetes Mellitus.—If insulin is administered in large doses before the two principal meals of the day, over unbroken periods, it has been observed by Chabanier and Copeman that a certain summation of effect can be obtained. That the actual basal trouble is diminished in intensity is shown by the progressive lowering of the "ketonic threshold value"—the point at which ketonuria appears when a patient is placed on a diet containing a known quantity of protein and fat and no carbohydrate. This value is expressed as the patient's blood sugar content at this moment, and is a direct method of expressing the intensity of the basal factor at any given period. This action of insulin can be pushed to such an extent that the patient may be transformed, metabolically speaking, into a normal person while under its influence, this condition being capable, in favorable cases, of persisting for variable periods after the cessation of injections. This experience led to the idea that treatment might be attempted in the form of "series" of injections, somewhat in the same way that syphilitic courses are arranged. The results that have been obtained appear to justify the adoption of this method of treatment, at any rate in a majority of cases.

Mental Condition Nine Years After Ventricular Punctures.—Gregory's patient suffered from a severe attack of meningitis at the age of 5 months. She recovered, and is now 9 years of age. On the fifth day of illness, no fluid could be obtained from the spinal canal, and it became necessary to relieve the tension by puncture of the right lateral ventricle through the lateral angle of the fontanel. During the next three weeks, the intracranial pressure remained very high, and the ventricle was punctured almost every day, yielding sometimes as much as 100 cc. of fluid; this was partly replaced by small doses of antimeningococcal serum. Altogether 30 cc. of serum was given. After the first few days, meningococci ceased to appear in the fluid, which gradually became clearer. As the tension relaxed, ventricular puncture was made at longer intervals. It was stopped at the end of five weeks. By this time, a fair degree of hydrocephalus was noticeable, the head measuring 17¼ inches (43.2 cm.), but the pyrexia and vomiting had ceased and the general condition was much improved. The case is exceptional—first, because the patient recovered at all after such an early attack, and secondly, because she suffered comparatively little brain injury in spite of repeated ventricular puncture. Gregory is convinced that, if the fluid had been allowed to collect, the resulting hydrocephalus would have produced a hopeless imbecile.

Relation of Intestinal Stasis to Pernicious Anemia.—The cases cited by Chapman and Duff seem to show direct association of stasis with bacterial or chemical toxemia, and subsequent development of pernicious anemia. The absence of any malignant disease was shown by the operation, the five years' duration, and the blood pictures. The intestinal obstruction was due to chemical or bacterial toxemia, and not to any mechanical means; and, although the obstruction was relieved by the operation, yet the toxemia still persisted to produce the pernicious anemia.

Fukuoka Medical Journal, Fukuoka, Japan

19: 23-25 (April) 1926

Bone Formation in Penis: Three Cases. T. Homma.—p. 23.
Influence of Grafting Great Omentum on Kidney Where Section is Made in Experimental Nephritis. K. Tokuyama.—p. 24.

Glasgow Medical Journal

105: 321-392 (May) 1926

Exophthalmic Goiter. F. R. Fraser and T. P. Dunhill.—p. 321.
Medicine as Career. A. M. Ramsay.—p. 339.
Scientific Basis of Public Health Administration. A. S. M. Macgregor.—p. 351.
Gastric Carcinoma Without Gastric Symptoms: Two Cases. A. M. Crawford.—p. 360.
Nail in Hip for Fourteen Years. A. MacLennan.—p. 362.

Indian Medical Record, Calcutta

46: 97-128 (April) 1926

Framboesia Tropica. C. Winckel.—p. 97.
Longevity. J. N. Ganguly.—p. 98.
Antibodies. A. Roy.—p. 100.

International Journal of Psycho-Analysis, London

7: 155-295 (April) 1926

Psycho-Analytic Notes on Coué's Method of Self-Mastery. K. Abraham.—p. 190.
Character Formation on Genital Level of Libido Development. K. Abraham.—p. 214.
Deprivation of Senses as Castration Symbol. E. Jones.—p. 236.
Symbolism of Serpent. R. F. Fortune.—p. 237.

Irish Journal of Medical Science, Dublin

6: 201-248 (May) 1926

*Roentgenotherapy of Exophthalmic Goiter. M. R. J. Hayes.—p. 204.
Id. T. G. Moorhead.—p. 212.
Surgical Treatment of Exophthalmic Goiter. W. I. de C. Wheeler.—p. 216.
*Unusual Case of Pyrexia. B. Solomons and J. Lumsden.—p. 223.

Roentgenotherapy of Exophthalmic Goiter.—The beneficial effects of roentgen-ray treatment of exophthalmic goiter, Hays says, are directly attributable to their action on the rapidly proliferating cells of the diseased gland. This fact and the very definite clinical evidences of amelioration are sufficient to justify the employment of roentgenotherapy on rational grounds as a very valuable adjunct in the treatment of this disease.

Pyrexia in Tuberculous Salpingitis.—Solomons and Lumsden draw attention to a fact that is not sufficiently considered; namely, that a young woman with pyrexia without any marked symptoms may be suffering from tuberculous salpingitis, which is essentially a curable disease.

Journal of Biochemistry, Tokyo

6: 1-100 (Jan.) 1926

Glucose-Amino Combinations. Y. Komori.—p. 1.
Comparative Biochemistry. II. *Behavior of Aromatic Fatty Acids and Pyridins in Animals.* Y. Komori, Y. Sendju, J. Sagara and M. Takamatsu.—p. 21.
Occurrence of Amino-Acids in Bile in Common Bile Duct Cysts. T. Takaki.—p. 27.
Synthesis of Phosphoric Acid Esters. I. *Behavior Toward Yeast.* R. Nodzu.—p. 31.
Id. II. Hydrolysis of Diacetone Hexose *Monophosphoric Acid Esters.* R. Nodzu.—p. 49.
Tetrapeptid of Gliadin. R. Nakashima.—p. 55.
Determination of Cellulose in Human Feces and Digestion of Nutritive Cellulose. T. Kohmoto and S. Sakaguchi.—*p. 61.*
Synthetic Action of Pepsin. T. Oda.—*p. 77.*
Relationship Between Bile, Snake Venom and Cholesterin. S. Yonemura and M. Fujihara.—p. 91.

Journal of Oriental Medicine, Dairen, Southern Manchuria

4: *71-84* (May) *1926*

Retropharyngeal Tumors: Fibromas. Y. Iriyama.—p. 71.
Primary Cancer of Pancreas. K. Suno.—p. 76.
Teratoid Tumor of Pericardium. T. Ishii.—p. 78.
House Hygiene in Manchuria. H. Tagawa and M. Hiramatsu.—p. 79.
Influence of Castor Oil on Movement of Human Uterus During Later Stages of Pregnancy. T. Sato.—p. 81.
Influence of Local Warming of Nerve on Effects of Galvanic Stimulation. C. L. Hou and T. Y. Yen.—p. 83.
Antipyretic Action of Cinchonin and Chinin. F. Shiratori.—p. 83.

Journal of State Medicine, London

34: *249-310* (*May*) *1926*

Occupational Cancer. C. O. Stallybrass.—p. 249.
Teaching of Hygiene in Army. J. A. Anderson.—p. 269.
Tuberculosis and Employment. A. N. Cox.—p. 278.
Diphtheria: Bacteriologic Significance. H. Stott.—p. 284.
Control of Venereal Disease by Individual Effort. H. W. Bayly.—p. 289.
Preservatives in Nonalcoholic Beverages from Manufacturers' Standpoint. R. L. Morris.—p. 293.

Kenya Medical Journal, Nairobi, East Africa

3: 1-30 (April) 1926

Dietetics: Mineral Requirements. J. B. Orr.—p. 4.
Kikuyu Market and Kikuyu Diet. R. A. W. Procter.—p. 15.
Value of Rations Issued to Contract Laborers at Lake Magadi. P. A. Maplestone.—p. 23.

Lancet, London

1: 1021-1074 (May 29) 1926

*Present Position of Tuberculosis Problem. A. Newsholme.—p. 1021.
*Campaign Against Tuberculosis. J. G. Adami.—p. 1027.
Hour-Glass Stomach: Operations of Choice. S. Pringle.—p. 1031.
Causation of Gynecomastia (Mammary Feminism). F. P. Weber.—p. 1034.
Recurrent Intussusception. P. R. Hawe.—p. 1036.
Pneumococcal Meningitis: Cisternal Puncture. A. H. Douthwaite.—p. 1036.
Carbon Tetrachloride Poisoning Due to Bursting of Patent Fire Extinguisher. L. A. Dingley.—p. 1037.
Dangerous Drugs Acts: Application by Physician and Pharmacist. W. Willcox.—p. 1071.

Effect of Antituberculosis Campaigns.—Newsholme reviews the beneficent results of antituberculosis effort in Great Britain and elsewhere, and stresses especially the point that steady educational work is required until the public realizes that present antituberculosis work is sound and beneficent, and that it needs to be extended in every direction. Until in every area every tuberculous patient is receiving throughout the whole of his sick life such care as will give him the best chance of recovery, and which, whether recovery is possible or not, will secure comfort for him, and protection against infection of all who are associated with him, the medical profession cannot be satisfied. When this can be said, the present rate of decline in the death rate from tuberculosis will become more rapid, and one of the chief causes of present suffering and distress and the burden of dependent widows and children which follows later will be very greatly decreased. The excessive incidence of tuberculosis in early childhood and the important part played by epidemic diseases in increasing tuberculosis emphasize the extreme *importance of* connecting tuberculosis work and child welfare work closely together and of affiliating both to general public health work.

Vaccination Against Tuberculosis.—Adami extols the work of Calmette and endorses the use of B. C.-G., or Bacillus Calmette-Guérin, for vaccination against tuberculosis as a means of eradicating both human and bovine tuberculosis.

Medical Journal of Australia, Sydney

1: *423-450 (April 17) 1926*

Radiologic Aspect of Certain Forms of Osteochondritis. C. MacDonald.—p. *423.*
Disabilities of Shoulder Region. J. N. Morris.—p. 432.
Case of Gummata of Urethra. N. M. Gibson and C. J. Wiley.—p. 437.

1: 451-480 (April 24) 1926

*Mechanism of Daughter Cyst Formation in Hydatid Disease. H. R. Dew.—p. 451.
Diagnostic Value of *Pyelography.* R. K. Lee-Brown.—p. 460.
Triple Pregnancy with Placenta Praevia, Abortion and Postpartum Hemorrhage. A. E. Brown and K. M. Doig.—p. 464.

1: 481-506 (May 1) 1926

Treatment of Fractures in Casualty Hospital. P. Cherry.—p. 481.
Treatment of Fractures of Lower Extremity. M. L. Scott.—p. 485.
Fractures and Dislocations of Upper Extremity. B. Smeaton.—p. 487.
Adiposis Dolorosa in Two Cases. F. S. Hone.—p. 488.
Aniridia in Four Generations. J. B. Lewis.—p. 489.

Nature of Formation of Hydatid Daughter Cyst.—In Dew's opinion, daughter cysts in a typical hydatid cyst have an endogenous origin *only. They usually arise by* progressive evolution of the cells of the original germinal membrane or from brood capsules. More rarely they may develop from scolices. Their formation may be regarded as an expression *of the powers of persistence of the parasitic cells. From* thin walled daughter cysts having the typical origin, granddaughter cysts may arise in another way. This method consists of an external herniation of both layers at weakened parts of the laminated coat with secondary exclusion of the pouch. This is a rare method. Exogenous daughter cyst production from intracuticular nuclear masses, as usually described, does not occur. In secondary omental cysts, in bone and in the viscera of herbivora, peculiar cysts form which are due to external herniation of both layers with *secondary closure and cyst formation, such herniations being* dependent on the nature of the adventitious tissues. Secondary echinococcosis is a well established fact and may occur in the abdomen, in the pleura or in operation wounds as the result of implantation of daughter cysts, brood capsules or scolices. Hydatid emboli and metastases can occur after intravascular rupture of cysts with carriage of brood capsules or scolices by the blood stream and their survival and growth in new situations. *This is the* explanation of most cases of multiple cysts of the lungs, heart and brain.

Sei-I-Kwai Medical Journal, Tokyo

45: *1-16 (April) 1926*

Implantation Metastases in Subarachnoid Space. N. Kono.—p. 1.
Bacteriologic Studies on Bioluminescence. I. Cause of Luminescence in Fresh Water Shrimp. Y. Yasaki.—p. 14.
Biochemical Studies on Calcium. I. Influence of Calcium Preparates on Enzyme Action. T. Munehisa.—p. 16.

South African Medical Record, Cape Town

24: *169-192* (April *24*) *1926*

*Tryparsamide and Neurosyphilis. A. Pijper and E. D. *Russell.—p. 173.*
Venereal Diseases in South Africa. J. A. Mitchell.—p. *179.*

24: 193-216 (May *8*) *1926*

Native Witch Doctors and Healers. J. B. McCord.—p. *195.*
Status of Sanocrysin Treatment in Denmark. A. J. *Orenstein.—p.* 205.
Activity of Schick Reaction Products. S. F. *Silberbauer.—p.* 207.
Alcohol and Eyestrain. H. Bodkin.—p. 208.
Delivery During Attack of Paroxysmal *Tachycardia.* J. M. Whyte.—p. 209.
Case of Spontaneous *Expulsion of* Uterus with Retained Placenta (?). A. B. Theron.—*p. 209.*

Tryparsamide and Neurosyphilis.—Pijper and Russell have found the combination of tryparsamide and mercuric salicylate effective in early general paralysis and tabes. In late neurosyphilis it is beneficial, producing well marked physical improvement. Tryparsamide in doses of 3 Gm., intravenously, produces no untoward effects. Of ten *patients treated,* eight have suffered from dimness of vision. The condition was transient in all except two cases, and disappeared completely with the cessation of treatment. Of the two patients in whom the condition was persistent, one was an advanced paretic, the other a tabetic with a history of about one year's duration. Neither patient had abnormal retinas before treatment. In both these cases optic atrophy developed. Of the remaining eight cases, in four, after completion of treatment, the fundus oculi was reported as "too gray" by the oculist.

Bulletin de l'Académie de Médecine, Paris

95: 449-472 (May 11) 1926

Spirochetes of Bronchial Spirochetosis. G. Delamare.—p. 459.
Arrest of Hemorrhage by Intravenous Injections of Sodium Citrate. M. Renaud.—p. 467.
*False Gastric Ulcers. V. Pauchet.—p. 470.

Foreign Bodies Simulating Gastric Ulcer. — One of Pauchet's patients had swallowed four needles three years before; the other, a pin thirty years before. The pain and repeated vomiting of blood suggested the diagnosis of gastric or duodenal ulcer. Radioscopy failed to reveal the presence of the foreign bodies, evidently on account of the opaque suspension used. At the operation, the needles were found in the duodenum of one, the pin in the pylorus of the other woman. There were no traces of ulcer or cancer.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 723-736 (May 7) 1926

*Reactivation of Wassermann Test. M. Pinard.—p. 724.
Vaccination with Diphtheria Anatoxin. C. Zoeller.—p. 726.
Action of Visible Light Rays on the Skin. A. C. Guillaume.—p. 730.
Subcardiac Cancer of the Stomach. P. Le Noir et al.—p. 732.

Reactivation of Wassermann Test.—In Pinard's case a positive Wassermann test appeared in the course of uremia. The urea content of the blood was then 2.10 Gm. per liter. The Wassermann reaction became negative when the urea dropped to 0.34 Gm. The patient was not aware of having ever contracted syphilis, but investigation revealed four abortions and two premature childbirths in the history of the wife. This evidently testified to a latent syphilis of the patient reactivated under the influence of uremia.

Comptes Rendus de la Société de Biologie, Paris

94: 633-720 (March 19) 1926. Partial Index

*Infectious Origin of Splenomegaly. Nanta et al.—p. 635.
Action of Embryo Extracts in Gastric Ulcer. P. Carnot.—p. 637.
Venous Pressure in Mental Disease. H. Claude et al.—p. 641.
Medulla Puncture and Intestinal Motility. Tournade and Chabrol. —p. 654.
Kottmann Test in Endocrine Disturbance. Etienne et al.—p. 667.
*Testicle Extract in Diabetes. L. Cornil and L. Jochum.—p. 671.
Acid-Base Balance in Urticaria. P. Drouet and M. Verain.—p. 675.
*Possible Causes of Insulin Convulsions. M. Nechkovitch.—p. 683.
Influence of Sodium Citrate on Bacteriophage. Asheshov.—p. 687.
Complement Fixation in Tuberculosis. Pierret and Breton.—p. 699.
Importance of the Bacteriophage in Purification of River Water. V. Bilouet.—p. 708.
Physical-Chemical Changes in Blood Under Local Cold. L. Septelici.—p. 716.

Infectious Origin of Splenomegaly of Banti Type.—In Nanta, Pinoy and Gruny's histologic and bacteriologic examination in five cases of splenomegaly, the spleen tissue presented considerable granulomatous degeneration, and only slight sclerosis, contrary to what is usually noted in Banti's disease. The microscope revealed a large spirochete and a streptobacillus, of the myxobacteria type. Inoculation proved positive in two guinea-pigs, but it is still uncertain whether the two associated micro-organisms or only one of them causes the affection.

Action of Testicle Extract on Diabetes.—Cornil and Jochum used testicle extract in three cases of diabetes. An injection of 1 cc. of an extract representing 0.06 Gm. of young bull testicle induced notable reduction of the output of urine and also of its sugar content. They refer to Korenchevsky and Carr's research, confirming an insulin-like substance in testicle extracts.

Rôle of Glucose and Ions in Insulin Convulsions.—Nechkovitch increased the hydrogen ion concentration in rats with hypoglycemia, by reducing the atmospheric pressure. This induced convulsions in the animals similar to those from insulin. The convulsions ceased when the rats were placed in an atmosphere of pure oxygen. The action of hydrogen ions may be among the factors responsible for the convulsions from insulin.

Paris Médical

59: 489-508 (May 22) 1926

A Hundred Years of Pathology. A. Cade.—p. 489.
Oscillometry in Diagnosis of Arteritis. Labbé and Heitz.—p. 498.
*The Babinski Reflex in Infants. P. Mathieu and L. Cornil.—p. 501.
*Anaphylaxis to Milk. E. Debbas.—p. 506.
The Chronic Diarrhea of Cochin-China. M. Léger.—p. 507.

Variations of the Toe Extension Reflex in Infants.—Mathieu and Cornil's research was made on 142 children, 1 day to 36 months old. The Babinski extension reflex is the physiologic phenomenon in infants not yet able to stand. At the child's first attempts to learn to walk, the extension reflex is replaced by flexion of the big toe in 50 per cent; as soon as the infants can stand and walk firmly, the flexion reflex appears in all of them, usually between the twelfth and eighteenth month. Flexion of the toes is a necessary act for a firm erect position. By repetition, it becomes the physiologic response to stimulation of the sole.

Anaphylaxis to Both Human Milk and Cow's Milk.—The history of Debbas' patient is as follows: During the first three months of life the infant was fed at the mother's breast. Then cow's milk was given; a typical anaphylactic shock with urticaria developed the same day. It subsided on restriction to water and reappeared when milk was given again. Feeding by a wet nurse also entailed two anaphylactic shocks. Desensitization started with 5 drops of cow's milk (mixed with vegetable soup); it was increased by 5 drops every three hours, not surpassing 20 drops the first day. There were no signs of intolerance. The next day, the first dose was 20 drops, increased by 5 to 30 drops. The third day the first dose was 30 drops, increased by 10 to 60 drops. The fourth day a teaspoonful of milk was given at once; the fifth day a tablespoonful, increased to a cup. The cup dose was continued for three days, the quantity of the soup gradually reduced. The infant is now 9 months old; no anaphylactic shocks have been noted to date. It is possible that the exaggerated susceptibility to cow's milk had aroused a latent anaphylaxis to the human milk.

Presse Médicale, Paris

34: 625-640 (May 19) 1926

*Biology of Vaccination Against Diphtheria. C. Zoeller.—p. 625.
*The Epilepsy Habit. P. Hartenberg.—p. 627.

Biologic Conditions Which Determine the Outcome of Vaccination Against Diphtheria.—Immunology, Zoeller says, is the younger and inseparable sister of epidemiology. Contagion is not only the cause of the spreading of diphtheria, it is also a factor of spontaneous or occult immunization. Most persons with a positive Schick test at the outbreak of an epidemic seem to be immunized four or five months later; only a few contract the disease. Anatoxin tests reveal in the former an allergic receptivity from previous exposure to contagion. Some persons are endowed at birth with a natural reactivity, consisting in immediate immunization on exposure to contagion. Those with a weak reactivity are the hyperreceptive; they may develop diphtheria more than once; even repeated infection does not induce immunity in them. Vaccination may be superfluous in subjects with this biologic high reactivity, and it may be undependable in those with low reactivity. Hence, subjects with a medium reactivity are the ones to benefit from vaccination. An overneutralized vaccine should be preferred, since it is less dangerous, and more effectual. With three injections of hyponeutralized vaccine, immunity is induced in six months in from 20 to 60 per cent, and with hyperneutralized vaccine in from 80 to 90 per cent.

The Epileptic-Seizure Habit.—Hartenberg considers habit as an important factor in repeated epileptic seizures. The convulsions are the consequence of inhibition of the functioning of the cortex, from various lesions. These may be sequelae from meningo-encephalitis, scars from birth trauma, or defective development—all chronic conditions—and the epilepsy is of the essential type. Acute lesions, an abscess, for instance, entail only symptomatic epilepsy. The habit starts with the first convulsion, and successive seizures enhance the tendency to pathologic reflexes, gradually lowering the seizure threshold. The acquiring of habits is one of the fundamental functions of the brain; recurring epileptic seizures teach the imperative necessity for breaking up the habit by any and all means at the first manifestations.

Revue Médicale de la Suisse Romande, Geneva

46: *261-324 (April 25) 1926*

Fractures of the Elbow. J. Roux.—p. 261.
The Bex-les-Bains Mineral Waters. Chollet.—p. *276.* C'cn.
Multiple Carcinoid of Intestine and Peritoneum. Decker.—p. *292.*
Carcinoma of Biliary Tract. A. Thévenod and F. Finck.—p. *297.*

46: 325-388 (May 25) 1926. Dedicated to H. Sahli

*Cancer Statistics. A. Renaud.—p. 331.
Spasm in Stomach Disease With and Without Ulcer. Vulliet.—p. 357.
The Automobile Carbon Monoxide Danger. M. Chapuis.—p. 371.

Demography and Cancer Statistics.—Renaud discusses numerous data and statistics on cancer. Climate, the soil, the mode of living or food do not seem to have any influence on the development of cancer. Connection of cancer with parasites of the digestive tract has been noted only exceptionally. Chief among the few cancers of occupational origin are those of radiologists. The prevalence of cancer seems to be the same in both sexes and in various races. The localization may be connected with certain rituals. Thus cancer of the penis seems to be rare in Jews and Mohammedan Hindus, while it is frequent in Buddhist Hindus who do not practice circumcision. The maximum incidence of cancer is between 60 and 70. It is neither contagious nor hereditary, although *a predisposition to cancer cannot be denied.* The frequency of cancer is the same in the New World and in the Old; in the West and in the East. Statistics may show a larger cancer rate in civilized countries. This does not mean that civilization is responsible for the malignant disease, but that the art of diagnosis is better developed.

Schweizerische medizinische Wochenschrift, Basel

56: 437-488 (May 15) 1926. Surgical Congress Number

End-Results of Trephinings. A. Jentzer.—p. 437.
Albee Operation. G. Dardel.—p. 439.
Marble-Bone Disease. W. Lauterburg.—p. 441.
Surgery of Bladder and Ureters. T. Naegeli.—p. 443.
Ten Liter Hydronephrosis. E. Ducrey.—p. 445.
Luys' Prostate Operation. E. Bircher.—p. 445.
True Hermaphrodism. C. A. Pettavel.—p. 447.
Staphylococcus Infection. F. de Quervain.—p. 449.
Pendulous Breast. F. de Quervain.—p. 451.
*Exophthalmic Goiter and Cretinism. M. Branovačky.—p. 453.
Acute Pancreatitis and Peritonitis. L. Choquard.—p. 454.
Gunshot Wounds of the Heart. A. Lüthi.—p. 454.
Tear Flow from Ether. Ceppi.—p. 455.
Cancer of the Esophagus. F. Merke.—p. 456.
Function of Ileocecal Valve. W. Odermatt.—p. 457.
Hernias of Bursa Omentalis. W. Odermatt.—p. 459.
Rarities in Abdominal Surgery. A. Wydler.—p. 462.
Gelatine Prosthesis of Ear and Nose. Strauss.—p. 464.
Sarcomas of Bones. A. Jentzer.—p. 465.

Exophthalmic Goiter and Cretinism.—Branovačky used the sensitiveness of rats to low oxygen pressure as a test for thyrogenic substances. Injections of a serum from patients with exophthalmic goiter increased the sensitiveness of the rats. Addition of serum from cretin dwarfs with atrophic thyroids lowered and sometimes neutralized this effect of the serum from exophthalmic goiter patients. Commercial preparations from thyroidectomized animals were inactive, but the serum from a goat, operated on by him, had the same neutralizing action as the serum from cretins. He believes that the thyroid has a detoxicating action which occurs outside of the gland.

Policlinico, Rome

33: 685-719 (May 17) 1926

Migraine. A. Capparoni.—p. 685.
Repeated Ectopic Pregnancy. D. Clemente.—p. 688.
*Puerperal Sepsis. T. Cavazzani.—p. 689.
*Poisoning from Castor Beans. F. De Pascalis.—p. 691.

Puerperal Sepsis.—Cavazzani recommends the following treatment in puerperal infection of the uterus: After clearing the external parts and irrigation of the vagina with a warm physiologic solution of sodium chloride, containing a little iodine, apply tincture of iodine to the cervix. Introduce Braun's syringe or a rubber catheter into the uterus, and inject a few decigrams of 10 per cent camphorated oil. Repeat the treatment once or twice daily and irrigate the vagina.

Castor Bean Poisoning.—Pascalis observed a grave poisoning from three castor beans taken by a girl, 17 years old. Fresh beans seem to be especially dangerous. Boiling destroys the poisonous ricin. He emphasizes the necessity for precautions since the cultivation of the plant has been resumed in Italy on a large scale for military purposes.

Archivos Brasileiros de Medicina, Rio de Janeiro

16: 1-52, 1926

*Anthrax of the Face. Genesio Pacheco.—p. 1.
Roentgen-Ray Treatment of Acute Inflammation. J. Campos.—p. 7.
*Malarial Orchiepididymitis. Americo Valerio.—p. 11.
Is Cancer Inherited? Mendonça Castro.—p. 17.

Anthrax of the Face.—A youth employed *in packing* anthrax vaccine at the Cruz Institute in Brazil developed an anthrax pustule in the face. It rapidly subsided under antianthrax serum. Cultures from the lesion killed guinea-pigs but not young sheep.

Malarial Orchiepididymitis.—In a young man with the malarial parasite in the blood, the *right testis and epididymis* became swollen and painful. The orchiepididymitis subsided under treatment for the malaria, which yielded to quinine. Three years later the malaria flared up anew or there was new infection, and the orchiepididymitis returned, with enlargement of the spleen. Under treatment of the malaria all symptoms subsided and the patient seems permanently cured as he has left the malarial zone.

Gaceta Médica de Caracas

33: *17-32 (Jan. 31) 1926*

Treatment of Tuberculous Hemoptysis. Villegas Ruiz.—p. 17.
Medical Geography of Venezuela. A. L. Briceño Rossi.—p. 19. C'cn.
Filariasis in Venezuela. P. A. Guzmán.—p. 27.

Hospital General, City of Mexico

1: 1-153 (Dec.) 1925. Partial Index

Spastic Paralysis. E. Vignon.—p. 7.
Treatment of Tabetic Crises. M. Ortega Cardona.—p. 11.
Treatment of Neurosyphilis. C. Zuckermann.—p. 12.
Nephrectomy for Tuberculous Polycystic Kidney. Villanueva.—p. 19.
*Periarterial Sympathectomy for Leg Ulcer. Mariano Vásquez.—p. 24.
Radium Susceptibility of Skin Cancers. M. Pallares.—p. 36.
*Molluscum Contagiosum in a Syphilitic. S. González H.—p. 60.
Treatment of Empyema. Correa.—p. 63. Idem. Ayala Gonzâlez.—p. 71.
Stenosis of External Os. M. Izaguirre Bustamente.—p. 79.
Extension for Fractured Humerus. S. Uribe y Rivera.—p. 82.
*Simplified Circumcision. F. Aceves.—p. 89.
The Hospitals of the City of Mexico. E. Landa et al.—p. 93.

Periarterial Sympathectomy for Leg Ulcer.—Mariano Vásquez reports promptly favorable results in his four cases, but the interval since has been short. A decided turn for the better was manifest in all, the lesion beginning to heal at once.

Molluscum Contagiosum in a Syphilitic.—The young woman presented scabies and impetigo besides manifestations of syphilis and typical molluscum contagiosum. It is the first instance of the latter encountered during the eleven years the Hospital General has been open.

Improved Technic for Circumcision.—Aceves gives illustrations of his new procedure for circumcision, claiming several superior advantages for it.

Medicina, City of Mexico

6: *219-242 (March) 1926*

*No Curetting of Puerperal Uterus. A. López Hermosa.—p. *219.*
Case of Melena Neonatorum with Recovery. M. Casañet.—p. *232.*
The Clinic and the Laboratory. C. Zuckermann.—p. *233.*
Notes on Parasitology. Prolongo.—p. *234.*

The Uterus in Puerperal Infection.—López Hermosa protests against a recent publication that commended curetting the puerperal uterus. He insists that it is useless in the majority of cases and dangerous in the others. If the infection is limited to the uterus, all scraps liable to putrefy must be removed, but very cautiously, with one or two fingers, combating exhaustion with stimulants and providing for free drainage. If the streptococcus is involved, give a streptococcus antiserum, and in grave cases induce a fixation abscess. If the symptoms grow worse, vaginal hysterectomy should be considered, before the infection spreads to the peritoneum If peritonitis proves rebellious to ice, lavage of the stomach and mercurial injections, a laparotomy is preferable, draining through the posterior vagina

Prensa Médica, Buenos Aires

12: 937 964 (Feb 28) 1926

*Entozoosis and Enterotoxicosis M. R Castex and D Greenway —p 937. C cn p 965
Hemogregarina in Buenos Aires Toads F L Niño —p 944
Economical Construction of Hospitals H Ayerza —p 952
*Carbon Dioxide in Cancer Blood Roffo and Degiorgi —p 961.

12: 965 992 (March 10) 1926

Kidney Function Test G Perrin —p 970
Tuberculosis and Sanocrysin J Dutrey —p 971

Intestinal Parasites in Argentina.—Castex and Greenway found the giardia in 10 1 per cent of 2 023 persons whose stools were examined, the ameba in 23 6 per cent, and *Blastocystis hominis* in 45 8 per cent In parts of Argentina, hookworm is found in more than 70 per cent of the inhabitants, but in the series recorded here it was present only in three cases In one case of infestation with strongyloides, the parasites were more numerous in the fluid aspirated with the duodenal tube than in the stools They discuss the clinical pictures presented by the hosts

Carbon Dioxide in Cancer Blood.—Roffo and Degiorgi state that the amount of carbon dioxide in the blood of rats with cancer corresponded to the response to the neutral red serum test This did not prove to be the case in man

Revista de Cirugia, Buenos Aires

5: 49 96 (Feb) 1926

*Psychotherapy in Surgery V Pauchet —p 49
Sauerbruch's Prosthesis with Kineplastic Arm Stump G Bosch Arana —p 57
*Mobilization of Root of Mesentery Alberto Gutierrez —p 65
Bone Implant Treatment of Knee and Hip Joint Disease C Robertson Lavalle —p 73 See abst May 15, 1926, p 1587
Technic for Resection for Varices of the Internal Saphenous Vein R Finochietto —p 83
*Appendix Twisted to Left Side J Ibarbia —p 85
A Mediastinal Lobe of the Lung J Cateula —p 95

Psychotherapy in Surgery.—Pauchet urges that every physician should study psychotherapy, whatever his specialty After a long sickness, the convalescent presents functional defects and habits of thought which should be prevented and corrected with physical measures and psychotherapy One woman with extreme gastroptosis insisted on operative relief, but the surgeon showed her by the spirometer that she was too weak for an operation She then used the spirometer regularly, every five minutes, watching the gage, and in two weeks it recorded 2 liters and in six months 3 liters, and there were no longer any indications for the operation In salpingitis, he orders systematic muscular exercises for three hours a day while the woman is in bed; when she gets up not only her body but her will power has been strengthened If the members of the family exert unfavorable suggestion, they must be shut out, after as well as before the operation The spirometer is particularly useful as it materializes suggestion by means of a physical action, and reenforces the healing powers

Mobilization of the Root of the Mesentery.—Gutiérrez enumerates a number of advantages from mobilizing the root instead of the attachment of the mesentery in obtaining access to the viscera on the median line Seven large illustrations show the ease with which the whole can be drawn down and aside after the root has been divided a little to the left, and the ease with which the incision can be sutured afterward The vessels are not endangered by this technic; it allows ample access to a calculus in the ureter and to retroperitoneal tumors.

Appendix on Left Side.—In the two cases described, the pains were felt at the usual points, the innervation not having been disturbed, notwithstanding the displacement, and the partial twisting of the colon in one case

Revista de Medicina y Cirugía, Havana

31: 115 140 (Feb 25) 1926

*Congenital Absence of the Ulna Elpidio Stincer —p 115
The Leprosy Question from Modern Standpoint W. H. Hoffmann —p 119.
Periduodenitis of Appendicular Origin. A. Guerra —p 125

Congenital Absence of the Ulna.—The girl was able to use her right forearm although there was not a trace of the ulna except close to the olecranon, and the radius was somewhat curved The hand and fingers were normal It is the first case of the kind encountered in Cuba, and a recent compilation of such deformities listed only seventy-one instances of absence of the ulna, while absence of the radius was known in 220 cases, of the fibula in 268, and of the tibia in 122.

Revista de la Soc. Arg. de Biología, Buenos Aires

1: 689 784 (Dec) 1925

Leishmaniasis of the Skin C Nicolle —p 689
*Immunity in Neurotropic Ectodermoses H Bigheri —p 694
Yeast, etc , in Paratyphoid B Infection Sagastume et al —p 701
Myxosarcoma in Man and Rous Sarcoma D Brachetto Brian —p 709.
Temperature of Guinea Pigs in Different Continents Mazza —p 719.
Necrosis of Fat Tissue J. Llambias —p 723
*Substances That Neutralize Toxin Pico and Miravent —p 730
*Ferrata Cells in Tissues Bianchi and Ramirez Corria —p 735
*Calcemia in Acromegaly C P. Waldorp —p 743
Stroma of Blood Producing Organs Bianchi and Ramirez Corria —p 752.
*Calcemia in Hyperthyroidism Waldorp and Trelles —p 762
Staining of Histiocytes Ramirez Corria and Bianchi —p 774

Immunity in Neurotropic Ectodermoses.—Bigheri's research with smallpox virus has apparently demonstrated that injection into an animal of tissues from another animal that has been immunized against smallpox transmits a protecting immunity, even when the tissues implanted are from organs that are always respected by smallpox infection. Intraperitoneal inoculation from the spleens of immunized rabbits immunized the animal so that inoculation of the skin later with smallpox material that inevitably induced pustules in normal rabbits failed to elicit any appreciable reaction.

Substances Modifying Diphtheria Toxin and Experimental Infection.—Pico and Miravent have been experimenting with substances which might have an action similar to that of formaldehyde in transforming toxins into toxoids or anatoxins, and they report that benzaldehyde is effectual in this way In rabbits, up to twenty lethal doses of diphtheria toxin injected could be neutralized with 1 cc of a 1 per cent emulsion of benzaldehyde without inducing a local reaction. Contrary to what is observed with formaldehyde, addition of sodium bicarbonate prevents this action of the benzaldehyde. The emulsion of the latter in physiologic salt solution has a p_H of 3 5 They believe that this research opens a prospect for chemotherapy of toxemias

Preexistence of Ferrata Cells in the Tissues.—Bianchi and Ramírez Corria applied Rio Hortega's silver carbonate stain to organ tissues, and found that the hemohistioblasts in the blood stream in leukemia have identical representatives in the organs, and hence they cannot be artefacts

The Calcium in the Blood in Thyroid Disease.—Waldorp found the basal metabolism above normal in four patients with typical acromegaly and intense vagotony. The calcium content of the blood was unusually low, as also in twenty-six cases of hyperthyroidism with high basal metabolism The glucose content of the blood was above normal in 50 per cent of those examined in the latter group There did not seem to be a direct relation between the calcium content of the blood and the basal metabolism of the moment; other factors are evidently responsible

Archiv für klinische Chirurgie, Berlin

140: 1 790 (May 6) 1926 Dedicated to A von Eiselsberg

*Studies of the Serous Cavities L. Schonbauer —p 1
*Wound Healing K Nather and A Jalcowitz —p 9
*Pernicious Anemia and Blood Transfusion K. Nather —p 14
Fever Following Splenectomy E Gold and H Schnitzler —p 28
*Postoperative Tendency to Spasm Jalcowitz and Starlinger —p 43.

Case of Fatal Potassium Permanganate Poisoning. H. Homma.—p. 56.
The Dangers of Biopsy. H. Heidler.—p. 62.
Meningeal Implants in the Brain. L. Schönbauer and H. Brunner.—p. 68.
Plastic Operations in Facial Paralysis. H. Brunner.—p. 85.
Conservative Treatment of Adamantinomas. H. Pichler.—p. 101.
Odontomas. H. Wolf.—p. 121.
Spontaneous Fractures of the Lower Jaw. O. Hofer.—p. 141.
Central Actinomycosis of the Jaw. J. Klingsbigl.—p. 163.
Case of Harelip, Cleft Palate, etc. A. Berg.—p. 168.
Tumors of the Salivary Glands. K. Michl.—p. 172.
Orbital Complication of Disease of Ethmoid. E. Wessely.—p. 181.
*Nonoperative Treatment of Otogenous Sepsis. C. Wiethe.—p. 189.
Indications for Operations on Internal Ear. J. Fischer.—p. 198.
*Sicard's Myelography. W. Denk.—p. 208.
Dislocations of the Cervical Spine. E. Ranzi and W. Vogl.—p. 234.
*Results of Surgery in Adolescent Goiter. B. Breitner.—p. 250.
Submucous Extirpation of Intratracheal Goiters. Suchanek.—p. 266.
Thyroid During Callus Formation. Kutschk-Lissberg.—p. 276.
Improved Technic for Laryngectomy and Phoniatrics. Seemann.—p. 285.
Surgery of the Bulb of the Jugular Vein. V. Orator.—p. 299.
Intrabronchial Administration of Medicines. M. Sgalitzer.—p. 305.
*Localization of Breast Carcinoma Metastases. G. Riehl, Jr.—p. 320.
Spasm of the Esophagus. G. Hofer.—p. 326.
Extirpation of Carcinoma of the Cardia. P. Clairmont.—p. 343.
Phlegmon of the Stomach. V. Orator.—p. 378.
Primary Hemorrhage in Carcinoma of the Stomach. K. Urban.—p. 391.
*Peptic Ulcer of the Jejunum. H. Haberer.—p. 395.
Perforating Peptic Ulcers. H. Kunz.—p. 419.
Postoperative Peptic Jejunal Ulcer. A. Winkelbauer.—p. 427.
Pathogenesis of Jejunal Ulcer. Winkelbauer and Starlinger.—p. 460.
Pathogenesis of Cyst of the Pancreas. P. Walzel.—p. 483.
Two Cases of Cyst of the Pancreas. E. v. Redwitz.—p. 501.
Rupture of Common Bile Duct from Contusion. Just.—p. 518.
Surgery of the Spleen. I. Philipowicz.—p. 528.
Invagination of Suture After Resection of Rectum. Ehrlich.—p. 532.
Functions of Omentum and Peritoneum. Goldschmidt and Schloss.—p. 542.
Inflammatory Omental Tumors in Pregnancy. A. Szenes.—p. 559.
A Retroperitoneal Tumor. R. Hofstätter and H. Schnitzler.—p. 567.
Two Cases of Retroperitoneal Tumor. O. Pritzi.—p. 583.
Lymphangitis of the Mesentery. B. O. Pribram.—p. 589.
Cystic Sarcoma of the Mesentery. F. Schürer-Waldheim.—p. 601.
*Pain as Symptom of Internal Hemorrhage. E. Graff.—p. 608.
Umbilical Sign in Extra-Uterine Pregnancy. R. Hofstätter.—p. 613.
Internal Hemorrhage in Rupture of Nongravid Tube. R. Köhler—p. 628.
Tumor Metastases Simulating Incarcerated Hernia. K. Hutter.—p. 635.
Metastatic Carcinoma of Ovary. I. Amreich.—p. 638.
Proliferation of Tubal Mucosa in Tuberculosis. Zacherl.—p. 642.
Vasomotor Pains in the Kidney. O. Schwarz.—p. 648.
Renal Tuberculosis Without Bladder Symptoms. P. Blatt.—p. 654.
Papillomatous Tumors of the Renal Pelvis. O. Stricker.—p. 663.
Retention Catheter in the Ureter. G. A. Wagner.—p. 701.
Prostatectomy. H. Leischner.—p. 716.
Treatment of Large Bladder Defects. H. H. Schmid.—p. 726.
*The Retention Catheter. T. Hryntschak.—p. 735.
Foreign Body in Bladder Removed Through Vagina. Stiglbauer.—p. 754
Potassium in Treatment of Bladder Atony. T. Antoine.—p. 756.
Dislocation Fracture of the Patella. O. Frisch.—p. 760.
*Giant Cell Tumors of Long Bones. E. Gold.—p. 763.
*Influence of Hip Ankylosis on Female Pelvis. N. Louros.—p. 782.
Abdomino-Anal Excision of Rectum for Carcinoma. J. Exalto.—p. 790.

Clinical and Experimental Studies of the Serous Cavities.—Schönbauer found that in their reactions to inflammation there is great similarity between the serous cavities of the body: rapidity of absorption is decreased by infection and still further by the introduction of hypertonic solutions. Over 100 cases of diffuse perforative peritonitis were treated by washing out the peritoneal cavity with weak hydrochloric acid and pepsin. The mortality was reduced two thirds. The source of the infection must first be closed off. The solution acts as a bactericide. In animal experiments an antitryptic serum was found of value in ileus, as a counteractive of protein intoxication. Animal experiments with empyema lead to the clinical recommendation, as a preoperative measure, of slow emptying of the cavity and refilling with hypertonic solutions. In meningitis, his experiments indicated the harmfulness of repeated lumbar punctures, and the undoubted value of injection of hypertonic solutions.

Wound Healing and Hydrogen Ion Concentration.—Nather and Jalcowitz administered ammonium chloride with a diet rich in meat to groups of patients, in an endeavor to influence the course of infection by increasing the hydrogen ion concentration of the blood and tissue fluids. The healing of furuncles and abscesses after incision appeared to be hastened by the treatment, and good results were observed in a large number of postoperative suppurations, especially colon bacillus infections. In other forms of infection, osteomyelitis, empyema, sepsis, etc., the results were negative or doubtful.

Pernicious Anemia and Blood Transfusion.—Nather warns that after repeated transfusions the organism becomes refractory to this form of treatment.

Postoperative Tendency to Spasm.—Jalcowitz and Starlinger found hyperexcitability of the neuromuscular apparatus in three fourths of all the cases which they examined after severe operations. The alkali reserve of the blood plasma rose at the time that the hyperexcitability appeared. These changes were independent of the form of anesthesia used, and are to be considered as consequences of the operation itself, with the ensuing disturbance of intermediate metabolism and particularly of ion equilibrium. Chvostek's sign was frequently observed in these cases; its appearance after an operation for goiter does not in itself necessarily indicate that the parathyroids have been injured.

Nonoperative Treatment of Otogenous Sepsis.—The four patients reported by Wiethe were successfully treated by vaccines or blood transfusion. In one case, after the failure of operations, polyvalent vaccines and autovaccines, a brilliant result was achieved by transfusion of the father's blood, after he had been inoculated with the patient's autovaccine. The reaction in the father was allowed to subside before the transfusion. The inoculation was found not to have altered the blood type.

Sicard's Myelography After Injection of Iodized Oil.—With exact technic, the level of the lesion may be ascertained with much certainty. Denk warns that the irritating effects of the iodized oil, though generally not severe, cannot be ignored, and that a delicate technic is required for the injection.

The Results of Surgical Treatment of Adolescent Goiter.—Breitner's detailed analysis of 100 cases operated on in Eiselsberg's clinic, 1922-1924, tends to substantiate the theory that endemic goiter in young persons represents a functional hypertrophy in the sense of an attempt to compensate by quantitatively increased production for a qualitative deficiency (lack of iodine) in the thyroid secretion, with its corollary that operative reduction of secreting tissue must be followed by iodine administration to avoid hypothyroid phenomena or rapid recurrence of the goiter.

Rare Localization of Metastases of Breast Carcinoma.—A woman, who had undergone operation for scirrhus carcinoma of the breast six years previously, visited Riehl's clinic on account of the falling of the hair over a number of small circular areas on the scalp. The skin was not discolored but, on palpation, flat, hard lumps were found in it. Examination of tissue removed showed carcinoma of the same structure as that usually presented by lenticular carcinoma metastases in the vicinity of a breast carcinoma. Riehl found but one similar case—that of Arndt—in the literature.

Peptic Ulcer of the Jejunum.—Haberer reviews 228 resections of the stomach performed by him in the ten months since he took over the Graz clinic, and compares this material with that of his thirteen years' activity at Innsbruck. His deductions are that gastric and duodenal ulcer material and the percentage of sequelae of gastroduodenal operations vary little for all large clinics; that sequelae are chiefly due to nonradical operations; that the diagnosis of postoperative adhesions is often given to jejunal ulcer, which, moreover, may escape detection by the most expert. Large glands in the mesentery of the gastro-enterostomy loop and inflammatory thickening of the mesentery are the best guides in the search for ulcers. Discovery of peptic ulcers that had developed after removal of the pylorus and antrum by Billroth II seems to conflict with the view that the pyloric glands play a part in their genesis, but Haberer has reason to believe that pyloric glands are sometimes present in the duodenum, and such may act in the same manner as pyloric glands left in the stomach, to excite the glands of the fundus to hydrochloric acid secretion.

Pain as a Symptom of Internal Hemorrhage.—Graff calls attention to the importance of pain in the diagnosis of more or less closed hematomas. The pain may begin suddenly or slowly, may be localized or radiating, and may reach an unbearable intensity. It is caused by pressure on nerves and by tissue tension. In two cases of intense pain radiating into the leg during childbirth, the uterus was found to be ruptured, with formation of a retroperitoneal hematoma. A hematoma in the rectus muscle was, on account of the character of the pain, diagnosed as torsion of the pedicle of an ovarian cyst.

The Retention Catheter: Indications and Aims.—Hryntschak discusses this subject in detail. In injuries to the urethra, the retention catheter acts as a splint to keep the part at rest, and protects the wounded tissues from contact with urine. In stricture, its presence tends to enlarge the lumen and increase the elasticity of the urethral wall, probably by inducing hyperemia with resultant absorption of infiltrates and softening of scar tissue. In retention of urine, the advisability of a retention catheter depends on the cause. In chronic, incomplete retention, too rapid emptying of the bladder presents dangers. In acute cases or in chronic cases in which gradual emptying of the bladder has been already carried out, the permanent catheter permits the detrusor muscle to regain its normal tonus, relieves pelvic congestion and improves the function of the kidney. If the retained urine is infected, the advantages of this method for the entire urinary tract are enhanced.

Giant Cell Tumors of the Long Bones.—Gold observes that giant cell tumors of the bone are benign reactive hyperplasias of the bone marrow. Their tumor appearance depends on a combination of bone destroying and bone forming properties. Their appearance in the epiphysis in young persons is probably related to the peculiarity of the blood supply of that region during youth. The operation of choice is simple exochleation followed by washing out of the cavity in the bone with hot water.

The Influence of Ankylosis of the Hip on the Female Pelvis.—Louros examined a series of roentgenograms of pelves with ankylosis of the hip joint and believes that he found a more or less pronounced narrowing of the pelvic inlet from rotation of one side of the pelvis. An anteroposterior rotation may narrow the outlet of the pelvis by bringing the posterior ramus of the pubic bone nearer to the sacrum.

Deutsches Archiv für klinische Medizin, Leipzig

151: 129-256 (May) 1926

*Pituitary Obesity. G. Marañon.—p. 129.
*Van den Bergh's Test. P. Wiemer.—p. 154.
Examination of Pulse. H. Sahli.—p. 172.
Diagnosis of Agranulocytosis. R. Schaefer.—p. 191.
Diabetes Innocens. P. Mahler and E. Rischawy.—p. 212.
Sensibility Tests. H. Stein and V. v. Weizsäcker.—p. 230.

Pituitary Obesity.—Marañon observed in a man obesity and impotence developing within a few days after an injury of the head. The pituitary was not enlarged, but the middle and posterior part was destroyed by a hemorrhage. The brain presented no gross lesions.

Van den Bergh's Test.—Wiemer concludes that the direct bilirubin reaction depends on the amount of biliary acids in the blood.

Deutsche medizinische Wochenschrift, Berlin

52: 819-860 (May 14) 1926

Anomalies of Sex Organs. Benthin.—p. 821.
Hormone Treatment. H. Handovsky.—p. 823.
Surgery of Dacryostenosis. T. Wegner.—p. 828.
Siberian Marmots and the Plague. H. Adolphi.—p. 829.
*Occult Bleeding. A. Mandelstamm.—p. 830.
Movement and Rest in Heart Disease. A. Fraenkel.—p. 831.
Diet in Diseases of Circulation. E. Stadler.—p. 833.
*Venesection. G. Rosenow.—p. 835.
Camphor. H. Guggenheimer.—p. 837.
Pseudocoma. H. Strauss.—p. 839.
Tuberculosis of Upper Air Passages. L. Joseph.—p. 839.
Liability of Institutions for Theft. E. Goldschmidt.—p. 842.
Distribution of Physicians. Prinzing.—p. 842.
"Arrowsmith." E. Stern.—p. 843.
Recent Italian Literature. H. Jastrowitz.—p. 853. C'tn.

Occult Bleeding.—Mandelstamm uses citrated plasma (from sedimentation tests) in Antoschina's tests for internal hemorrhages, such as ruptured ectopic pregnancy. He recommends the amidopyrine test in Jegoroff's modification: This test requires 3 cc. of a 5 per cent alcoholic solution of amidopyrine; 8 drops of 50 per cent acetic acid and 8 drops of a 3 per cent solution of hydrogen peroxide. Addition of one drop of the fluid to be examined induces an amethyst color, if positive. With examination of the serum or plasma for hematin, three tubes are set up: the first, as described; in the second, 1 cc. of the amidopyrine is replaced by alcohol, and in the blood, 2 cc. are replaced. All three tubes change color with plasma from patients with internal hemorrhage.

Venesection.—Rosenow cites the history of venesection as a typical instance of how the healing art precedes experimental research and is superior to it. He regards a venesection amounting to 5 cc. per kilogram (300 cc. in an adult of 60 Kg.) as a minimum. A strong man may require twice as much. The main benefit is derived in conditions of venous stasis, especially with impending edema of the lungs. It is not indicated in arterial hypertension except with headaches or other cerebral symptoms. Eclampsia, eclamptic pseudouremia, and edematous nephritis are favorably influenced.

Klinische Wochenschrift, Berlin

5: 873-920 (May 14) 1926

Mechanism of Labor. H. O. Neumann.—p. 873.
*The Blood and the Endocrines. H. Zondek and G. Koehler.—p. 876.
*Stomach Secretion. G. Katsch and H. Kalk.—p. 881.
Encephalitis in Man and Animals. F. M. Lewy et al.—p. 886.
The Nuclei of Leukocytes. I. Antoni.—p. 888.
*Sedimentation Test in Arthritis. G. Kahlmeter.—p. 889.
*Frequency of Exophthalmic Goiter. L. Firgau.—p. 890.
Wassermann Test with the Blood Clot. H. Spranger.—p. 893.
Centrifugation Instead of Filtration. Bach and Schepmann.—p. 893.
*Vagus Substance. O. Loewi and E. Navratil.—p. 894.
*Physostigmine and Ergotamine. O. Loewi and E. Navratil.—p. 894.
*Ergotamine and Intra-Ocular Tension. R. Thiel.—p. 895.
Artificial Light Therapy. S. Bommer.—p. 895. C'td.
Insurance Against Sickness. Reckzeh.—p. 899.
Vital Statistics. K. Freudenberg.—p. 918.

The Blood and the Endocrines.—Zondek and Koehler found within half an hour after administration of 0.1-0.3 Gm. of dried thyroid an increase of erythrocytes (but not of hemoglobin) amounting to one-half to two millions per cubic millimeter. Other subjects—especially during the winter—reacted with a decrease. They were able to produce by it anemia of ten to twelve days' duration. The blood picture in some polycythemia patients was favorably influenced by the therapy: The probable explanation for this was an enlargement of the spleen and retention of cells in it. The number of leukocytes decreased in certain leukemia patients. They do not wish to emphasize the significance of the thyroid alone. Blood changes occur in many endocrine disturbances.

Stomach Secretion.—Katsch and Kalk attribute the presence of chlorides in the stomach chiefly to a secretion which is to a certain extent independent of the secretion of hydrochloric acid. The clinical usefulness of the determination of chlorides is small, although cancer patients usually have higher concentrations than subjects with achylia of other origin. The duodenal reflux changes the results to some extent.

Sedimentation Test in Arthritis.—Kahlmeter does not regard an acute polyarthritis as cured until the sedimentation speed becomes normal. Physical therapy is not indicated before that time.

Frequency of Exophthalmic Goiter.—Firgau has collected statistics on the increased frequency of hyperthyroidism in women since the war. Only women between puberty and the menopause were affected. Among them, the majority (fifty-four out of seventy-five) were single. Of these, twenty-two were virgins, the majority of the others had a history of abortion or labor. She considers both abstention, and the excitement of extramatrimonial intercourse as causes for abnormal functioning of the sex organs, which constitutes a provocative cause for hyperthyroidism.

Vagus Substance.—Loewi and Navratil found that not only the intact heart but also its extracts, unless heated, destroy the "vagus substance" and also destroy acetylcholine. These facts make it probable that the destruction is due to a ferment, and that the vagus substance is an ester. Physostigmine and ergotamine inhibit this fermentative destruction of the vagus substance, as well as of acetylcholine, in vivo and in vitro. It is probable that the sensitization of the vagus by ergotamine and physostigmine is due to the action of these alkaloids on the ferment.

Ergotamine and Intra-Ocular Tension.—Thiel injected 0.00025 Gm. of ergotamine tartrate subcutaneously in patients suffering from simple glaucoma. The eye tension decreased within an hour. The drug is inactive in absolute glaucoma, and has little effect in normal eyes.

Medizinische Klinik, Berlin

22: 755-794 (May 14) 1926

*Treatment of Phlegmons. F. Pels Leusden.—p. 755.
Tuberculous Pleurisy. A. Walder.—p. 757.
Surgery of Pulmonary Tuberculosis. R. Pamperl.—p. 761.
Degkwitz' Measles Serum. F. Glaser.—p. 766.
*Liver Function Test. C. M. Behrend and O. Heesch.—p. 767.
Therapeutic Injury of Choroid Plexus. M. Schacherl.—p. 768.
"Results of Neurologic Treatment." Fischer.—p. 769. Reply. Cohn.—p. 770.
*Experimental Arteriosclerosis. K. Löwenthal.—p. 770.
Antitoxic Dysentery Serum. S. Kondo.—p. 775.
Amyloid Kidney and Occupational Injury. Von Schnizer.—p. 776.
Cancer and Its Treatment. O. Strauss.—p. 780.
The Celibacy of Assistants. F. Pels Leusden.—p. 793.

Treatment of Phlegmons.—Pels Leusden admits expectant treatment with hot dressings or Bier's suction in infected wounds as long as there are no signs of cellulitis. Considerable pain, throbbing, fever and leukocytosis indicate a phlegmon, which should be opened—even before pus shows—with a sharp knife under light general anesthesia and Esmarch's local anemia.

Liver Function Test.—Behrend and Heesch examined the blood, urine and feces of subjects injected with a sodium salt of tetraiodophenolphthalein. Healthy subjects eliminated iodine by the urine for ten to twenty hours thereafter. It was demonstrable in the blood for a shorter period. The feces contained iodine for about ten days. The presence of iodine in the blood and its elimination by the urine were prolonged in patients with liver diseases.

Experimental Arteriosclerosis. — Löwenthal surveys the literature on the relation of cholesterol to arteriosclerosis. He points out that it may be produced in rabbits by cholesterol even without increasing considerably its amount in the blood. He found—contrary to other investigators—arteriosclerotic changes in young subjects with lipemia occurring with lipoid nephrosis. He induced arteriosclerosis in omnivorous animals by feeding with cholesterol in oil in combination with large amounts of proteins or after castration.

Monatsschrift für Kinderheilkunde, Leipzig

32: 97-192 (May) 1926

*The Blood in Japanese Infants. T. Tomita.—p. 97.
*Primary Allergy and Shock. Von Starck.—p. 119.
Chickenpox. C. Nelken.—p. 128.
Reaction Time in Infants. A. Peiper.—p. 136.
Complications with Tuberculous Bronchial Glands. T. Stöber.—p. 144.
*Foreign Bodies in Vagina. T. Stöber.—p. 151.
Acute Tuberculous Osteomyelitis. R. Gralka.—p. 153.
Endocrines and Dystrophy. J. Duzár.—p. 158.

The Blood in Japanese Infants.—Tomita found eosinophilia in some of the Japanese infants and children with the exudative diathesis.

Death from Allergy Test.—Von Starck observed a boy, 1½ years old, with an eczema due apparently to hypersensitiveness to peas. The boy's condition improved. Starck wanted to test the correctness of the history. The boy was to be fed with a thick soup containing peas and other vegetables. He died after taking three spoonfuls.

Foreign Bodies in Vagina.—Stöber found two cherry stones, two pebbles, two splinters of wood and other foreign bodies, including a number of scraps of coal, in the vagina of a 2½ year old girl. The foreign bodies had caused a profuse purulent secretion. The mother believed they had been introduced by a brother, aged 6 years. Stöber believes that the patient herself introduced them.

Münchener medizinische Wochenschrift, Munich

73: 809-852 (May 14) 1926

*Disinfection of Bile. O. Specht.—p. 809.
Routine Appendectomy. K. Helly.—p. 812.
*Thallium Epilation. A. Buschke et al.—p. 815.
*Tetany and the Parathyroids. H. Beumer and C. Falkenheim.—p. 818.
Surgical Cure of Gastric Cancer. C. Wegele.—p. 819.
Euphoria After Autohemotherapy. J. Knosp.—p. 820.
Routine Wassermann Test. Stetter.—p. 822.
*Cumulative Action of Rays. H. Malten.—p. 823.
*Cure of Tuberculous Meningitis. K. Neidhardt.—p. 823.
Treatment of Pediculosis. I. Vonkennel.—p. 824.
Splint with Spikes. H. J. Bettmann.—p. 825.
Obstetric Leg Holder. Wiegand.—p. 827.
Colposcopy. H. Hinselmann.—p. 828.
Idiocy and Imbecility. W. Weygandt.—p. 828. C'cn.
Nephroses. Schlayer.—p. 831.
The Rhine Palatinate as Health Resort. F. Kaufmann.—p. 833.

Disinfection of Bile.—Specht never found salicylic acid in the bile after administration of acetylsalicylic acid. Methenamine, iodine and acriflavine were eliminated by the bile in small quantities. They did not seem to have any influence on the bacterial content of the gallbladder or liver bile.

Thallium Epilation. — Buschke, Langer and Schayer use only half the dose of thallium acetate (4 mg. per kilogram instead of 8 mg.), when combining it with roentgen-ray epilation in favus and other mycoses of the hair. The drug probably acts on the sympathetic, while the roentgen rays injure the roots of the hairs directly.

Tetany and the Parathyroids.—Beumer and Falkenheim saw no clinical results nor changes of the calcium and phosphate concentration of the blood after administration of a dried blood preparation in a case of idiopathic tetany. They explain the favorable results reported with it in parathyroprival dogs by the low phosphate content of the blood. Milk has a different action in idiopathic tetany from that in the tetany of rachitic children only because the latter are unable to retain the calcium. In this case it constitutes a food too rich in phosphates. In uncomplicated tetany, the calcium of the milk is retained, and it serves as a food rich in the latter ion. They consider both forms as due to the preponderance of phosphates in the blood.

Cumulative Action of Rays. — Malten's patient continued taking sunbaths after a therapeutic roentgen irradiation of the abdomen. An ulcer developed on a small upper border of the roentgen field which had not been protected by the trousers against the sun.

Recovery from Tuberculous Meningitis.—Neidhardt made ten lumbar punctures within three weeks in a boy with tuberculous meningitis. During this time he injected three times, at five day intervals, 0.5 mg. of "old tuberculin," in 20 cc. of physiologic solution of sodium chloride, intraspinally. The patient recovered.

Wiener klinische Wochenschrift, Vienna

39: 561-588 (May 13) 1926

Chemotherapy of Sepsis. P. Saxl et al.—p. 561.
Inhibition of Muscle Tonus. J. Pal.—p. 565.
*Digestion and Dermatoses. O. Porges.—p. 566.
Unexpected Results from Therapeutic Measures. E. Pribram.—p. 569.
Enhancing the Pupillary Reflex. S. Erben.—p. 570.
Egophony. G. L. Sacconaghi.—p. 571.
"Gastric Ulcer and Test Breakfast." T. Bársony.—p. 573.
Digitalis Treatment. L. Braun.—p. 574.
Syphilitic Skin Manifestations. Oppenheim. Supplement.—p. 1-22.

Digestion and Dermatoses.—Porges frequently noted itching, hives and eczema in patients with chronic catarrh of the cecum. He advises to avoid vegetables, fruits, peas and beans in the diet. Potatoes and dark bread are to be recommended as they favor fermentation. Hydrochloric acid should be administered with subacidity.

Zeitschrift für klinische Medizin, Berlin

103: 161-360 (May 4) 1926

*Water Elimination. R. Seyderhelm and E. Goldberg.—p. 161.
*Blood in Pernicious Anemia. Arneth.—p. 177.
Acute Leukemias. S. Kwasniewski and N. Henning.—p. 189.
Vegetative Nervous System. D. Pletnew.—p. 211.
*Epinephrine Test. E. Kylin.—p. 233.
*Minerals in Diabetes. R. Meyer-Bisch and W. Wohlenberg.—p. 260.
Jaundice. H. Ruge.—p. 272.
Streptothrix Pyemia. M. Mandelstamm and A. Kalinin.—p. 305.
*Minerals in Nephritic Blood. L. Nelken and H. Steinitz.—p. 317.
*External Secretion of Liver and Pancreas. K. Grunenberg.—p. 342.

Water Elimination.—Seyderhelm and Goldberg found that the erect posture reduces not only the diuresis but also the extrarenal elimination of water after drinking water or salt water. The addition of salt inhibits the renal secretion, but increases the extrarenal.

The Blood in Pernicious Anemia.—Arneth finds low absolute numbers both of the neutrophiles and lymphocytes in pernicious anemia. Monocytes are almost entirely absent. He emphasizes the shifting to the right with decrease of the neutrophiles with two nuclear fragmentations from the normal 35 per cent down to 16 per cent. He saw no myelocytes. The lymphocytes are mostly small, which he also considers as a shifting to the right ("negative reaction").

Epinephrine Test.—Kylin uses Dresel's technic. A subcutaneus injection of 1 mg. of epinephrine is followed in most normal persons within one or two minutes by a rise in the blood pressure. The maximum (15-20 mm. of mercury) is reached in five or ten minutes and the blood pressure returns to the previous level in forty-five to sixty minutes. Vagotonic patients react with a primary lowering of the pressure; sympathicotonia is indicated by an exaggerated rise. There may also be a combination of a primary depression followed by an abnormal increase. The vagotonic reaction occurs in the majority of patients with diabetes, with hypertension, bronchial asthma and peptic ulcers. The sympatheticotonic reaction is usual in exophthalmic goiter, acute nephritis and the final stages of hypertension (with affection of the kidneys). Functional neuroses show all three types, as well as the normal reaction. The potassium-calcium ratio of the serum is shifted toward the former in vagotonia, toward the calcium in sympathicotonia. Both ions are increased in amphotonia. Calcium and atropine are indicated in vagotonia.

Minerals in Diabetes.—Meyer-Bisch and Wohlenberg investigated the water and salt metabolism in four diabetic patients in coma. In two of them, the preliminary stages had also been under observation. They regard a low concentration of urinary chlorides as the first sign of impending coma. Inspissation of the blood follows, and may camouflage the lowering of the salt content of the blood. In fully developed coma, insulin alone is not capable of averting danger rapidly enough. An intravenous injection of 400-500 cc. of a 4.5 per cent solution of sodium bicarbonate acts quicker. The patient in coma reacts to an intravenous injection of a hypertonic sodium chloride solution differently from the normal. They explain this by a hypofunction of the pancreas.

Calcium and Potassium in Nephritic Blood.—Nelken and Steinitz found in the majority of patients with grave changes in the kidneys a lowered calcium concentration in the blood serum. Very low values were usually associated with considerable retention of nitrogen. Such was the case in all their fourteen cases of true azotemic uremia. The calcium level was normal in eclamptic and other pseudo-uremias. The potassium concentration of the serum was increased in many cases of grave kidney disease.

External Secretion of Liver and Pancreas.—Grunenberg had excellent results with a combined insulin-dextrose treatment (40 Gm. of dextrose to 10 insulin units) in grave jaundice. This led to similar treatment of catarrhal jaundice as well as of mild pancreatitis. The doses of insulin had to be increased considerably in grave jaundice (up to 300 units). Cinchophen derivatives were added in liver diseases.

Zentralblatt für Chirurgie, Leipzig

53: 1169-1232 (May 8) 1926

*Hemorrhage After Gastro-Enterostomy. M. Krabbel.—p. 1170.
Torsion of Appendices Epiploicae. K. W. Bender.—p. 1172.
*Habitual Dislocation of the Shoulder. E. König.—p. 1174.
Treatment of Ganglion of the Wrist. J. J. Ginzburg.—p. 1176.
Periarterial Sympathectomy for Neuralgia. A. W. Wischnewsky.—p. 1178.
Improved Needle for Drawing Blood. L. A. Barinstein.—p. 1180.
Anomaly of Testicle and Epididymis. J. Zipper.—p. 1182.
Torticollis: Etiological Observation. H. Lichtenstein.—p. 1185.

Hemorrhage Following Gastro-Enterostomy.—Krabbel suggests that biologic, endogenous noxae play a part in some cases of hemorrhage after gastro-enterostomy. Examination of a recent case four weeks after operation showed enlarged spleen and leukopenia and thrombopenia. He has never seen hemorrhage follow an operation for carcinoma, only after operations for ulcer. Heightened tendency to bleeding may belong to the constitutional factors underlying the ulcer diathesis.

Treatment of Habitual Dislocation of the Shoulder.—König reports that the original Kirschner method for curing habitual dislocation of the shoulder by free transplantation of a band of fascia about the joint has been used in the Königsberg clinic in ten cases since 1911. Seven were operated on from four to fifteen years ago. There has been one recurrence.

53: 1233-1296 (May 15) 1926

*Treatment of Pseudarthrosis. M. Zondek.—p. 1234.
Fractional Examination of Stomach Contents. A. Freukel.—p. 1235.
Treatment of Furuncle of the Face. M. Friedemann.—p. 1240.
Asphyxia During Anesthesia. E. Becker.—p. 1243.
Case of Postanginal Pyemia. L. Peritz.—p. 1250.
Incarcerated Internal Supravesical Hernia. G. Schiele.—p. 1252.
Tannic Acid Hand Disinfectant. W. L. Pokotilo.—p. 1254.

Treatment of Pseudarthrosis.—Zondek suggests that a disturbance at any link in the chain: fracture-site, sympathetic nerve, central organ, endocrine glands regulating bone regeneration, may lead to pseudarthrosis. Administration of thyroid, thymus or parathyroid preparations is justified when, with a diet rich in vitamins, a pseudarthrosis can be referred to endocrine disturbance.

Zentralblatt für Gynäkologie, Leipzig

50: 1362-1424 (May 22) 1926

Physiology of the Tube. F. v. Mikulicz-Radecki et al.—p. 1364.
*Ovarian Changes in Chronic Infections. H. Hartmann.—p. 1368.
Primary Carcinoma of the Hymen. O. Gerich.—p. 1372.
Ectopic Decidua. O. Brakemann.—p. 1374.
Episiotomy to Prevent Genital Prolapse. C. Bucura.—p. 1378.
An Unusual Abortion Injury. R. Schreiner.—p. 1380.
"Retention of Decidua." E. Löwenstein.—p. 1383.
The Bleeding Time in Gynecologic Diseases. H. Bock.—p. 1387.
*Treatment of Hemorrhagic Metropathies. G. Bakscht.—p. 1390.

Ovarian Changes in Chronic Infectious Diseases.—Hartmann examined the ovaries in eight cases of pulmonary and intestinal tuberculosis and in two cases of endocarditis lenta to discover the reason for the cessation of menstruation. The patients were from twenty to thirty-eight years old. They had menstruated regularly before the onset of their disease, but menstruation had ceased from four to eighteen months before death. The changes in the ovary indicated that the amenorrhea was due not to genital atrophy but to the maturation of the primordial follicle having been checked; the cause is probably cachexia.

Success of Autohemotherapy in Hemorrhagic Metropathies.—Bakscht draws from the ulnar vein of the patient 14 cc. of blood into a syringe containing 6 cc. of sterile distilled water. The blood is hemolyzed by rapid shaking, and is injected intragluteally. He found that uterine hemorrhages of endocrine origin yielded to this treatment in from eighteen to twenty-four hours. Stubborn cases required several injections to obtain results, and in all cases, regardless of the promptitude of the response, at least four or five injections were given at intervals of two days. Neither local nor general reactions took place. Bakscht reports the successful use of this method in five serious cases and in a number of moderate bleedings.

Russkaia Klinika, Moscow

5: 497-629 (April) 1926. Partial Index

External Influences on Bone Transplants. A. Vereshtshinsky.—p. 511.
Aneurysm of Pulmonary Artery with Endo-Arteritis. Shabad.—p. 525.
*Syphilis of the Stomach. V. Vasilieff and I. Mnatsakanoff.—p. 539.
Appendicitis and Pregnancy. S. Pevzner.—p. 550.
*Postoperative Pneumonia. F. Protopopoff.—p. 561.
*Electric Treatment of Ulcers. S. Uarova-Jakobson.—p. 570.

Diagnosis of Syphilis of the Stomach.—Vasilieff and Mnatsakanoff specify four forms of syphilis of the stomach; the catarrhal form, diffuse gummatous infiltration, diffuse fibrous hyperplasia and gumma with consecutive ulcer. They describe a case in a woman, aged 28, treated previously for assumed cancer of the stomach. The unusual thickness of the stomach wall, complete anacidity of gastric juice, severe pain in the upper abdomen, especially at night, and a positive Wassermann test suggested syphilis of the stomach. It was evidently a gummatous tumor of the pylorus with diffuse hyperplasia of the stomach. Under specific treatment the tumor disappeared; there was no further pain or vomiting and gastric secretion became almost normal.

Statistics of Postoperative Pneumonia.—Protopopoff observed postoperative pneumonia in 4 per cent of 2,274 surgical cases; the death rate was 0.4 per cent. In 18 or 20 per cent, the pneumonia occurred after operations on the gastro-intestinal tract; after other kinds of laparotomies in 12 per cent. Outside of abdominal section, postoperative pneumonia was noted only in 0.8 per cent. Intestinal peristalsis, as well as respiratory movements of the diaphragm and abdominal wall may propel the emboli into the lung, thus explaining the frequency of postoperative pneumonia after laparotomies. This pneumonia seemed to be of embolic origin in 80 per cent, while aspiration pneumonia was noted in 12 per cent, and hypostatic pneumonia in 8 per cent. Neither chloroform nor ether seemed to be responsible for the pneumonia, since the latter was less frequent after general than after local anesthesia (3 and 4.6 to 6 per cent, respectively).

Interrupted Current in Treatment of Neurotrophic Lesions.—Uarova-Jakobson obtained excellent results from arsonvalization treatment in seven cases of trophic ulcers. The latter were associated with traumatic neuritis, injury of the spinal cord, syringomyelia, diffuse sclerosis or spina bifida. The application was made directly to the lesion, for ten minutes, the exposures repeated daily or a day apart. Series of twenty or twenty-five exposures were repeated at certain intervals. Small ulcers healed after three or four sittings; larger ones within two months. The electric treatment had a favorable influence on muscular atrophy in a case of jacksonian epilepsy; also in another of poliomyelitis.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 1505-1588 (April 10) 1926

*Nonsurgical Treatment of Biliary Apparatus. Peutz.—p. 1506.
*Symmetrical Tuberculous Processes in the Eyes. Houwer.—p. 1516.
Surgical Treatment of Invagination in Children. Suermondt.—p. 1524.
Korsakoff's Psychosis After Ether Anesthesia. Stuurman.—p. 1535.
Blood Transfusion in Paralysis of Intestine. Leesberg.—p. 1537.

Nonsurgical Treatment of Disease of Biliary Apparatus.—Peutz expatiates on the great value of the Meltzer-Lyon and the Graham-Cole methods, citing cases from his own experience. In one puzzling case the retrospective diagnosis was duodenitis from a course of treatment with male fern; this had entailed spasm of the ampulla with mechanical jaundice and rapidly recurring liver colics; no gallstones.

Symmetrical Tuberculosis of the Eyelids.—Houwer reports two cases in which tuberculous nodules were found in one or both upper eyelids. The histologic structure of the nodules in these cases, as also in erythema induratum, miliary lupoid, and symmetrical lymphomatosis of the eye appendages, seems to be identical, and this connection between them is confirmed by the simultaneous or successive development of these different affections in the same patient. None of the lesions were actual tubercles.

1: 1589-1676 (April 17) 1926

*Narcolepsy. E. Janzen.—p. 1590.
*Case of Levulosuria. I. Snapper et al.—p. 1600.
*Vaccine Therapy in Chronic Bronchitis. E. F. Enklaar.—p. 1612.
Malaria Treatment of General Paralysis. Barnhoorn.—p. 1615.
Autotransfusion. Leesberg.—p. 1617.

Narcolepsy.—Janzen analyzes a case of true narcolepsy in an army officer, aged about 40, apparently free from tuberculosis, syphilis, hysteria, epilepsy, diabetes and kidney disease. He was a little over-weight, but no improvement was noted under reducing dieting, or tentative pituitary treatment. Both the Pandy and Nonne tests were positive at first, but dubious later. The temperature was subnormal, from 35.2 to 37.1 C., and there was lymphocytosis. In two other cases there was a narcoleptic syndrome and, in both, diplopia was noted during the effort to ward off the oncoming sleep. In one of these patients the sella turcica protruded abnormally but there were no signs of pituitary disease.

Levulosuria.—Snapper, Grünbaum and van Creveld tabulate the outcome of tolerance tests with 45 Gm. of levulose, fasting, in seventeen patients with various diseases, including one with cancer of the liver. Only in five was there evidence of even a slight reducing power in the urine thereafter. In nearly all the cases of true levulosuria on record there was an inherited diabetes mellitus taint. A case is described which was mentioned in these columns recently, page 1952. It was published simultaneously in a German and French journal as well as here.

Vaccine Therapy in Chronic Bronchitis.—Enklaar declares that his experience with sixty-eight cases has demonstrated that a polyvalent vaccine is a powerful aid in the treatment of chronic bronchitis. He used autogenous vaccines, but found it so difficult to obtain sputum from children, that he finally mixed the vaccines from old and young. Omitting thirteen cases in which adenoids or tonsils had evidently been a factor and were given surgical treatment, great benefit was realized in 80 per cent. He injected the vaccine intramuscularly at weekly intervals. His experience with whooping cough vaccine has also been favorable, and he is obtaining encouraging results with vaccines in bronchial asthma and other affections which he is now studying.

Hygiea, Stockholm

88: 225-272 (March 31) 1926

Liver Function Tests with Dyes. J. Tillgren et al.—p. 225.
*Genius Epidemicus at Stockholm. A. Magelssen.—p. 245.

88: 273-320 (April 15) 1926

A Case of Raynaud's Disease. J. Eriksson.—p. 273.
Surgical Anesthesia; Old and New. R. Roman.—p. 280.

88: 321-352 (April 30) 1926

Localization of Psychic Processes. S. E. Henschen.—p. 321.
Vest Pocket Case. C. O. Segerberg.—p. 331.
Color Sense of Motorists and the Crossing Signals. Boström.—p. 335.

Genius Epidemicus.—Magelssen here continues his comparative study of weather conditions and vital statistics over centuries and by special periods. This instalment analyzes the data for 150 years at Stockholm. He asserts that each country presents a mine of information in regard to the great laws regulating human existence. His research has apparently demonstrated that science and religion both lead to the same conclusion, that the human race is not its own master but is under the dominance of some invisible power which comes from above, and which at all times interferes in its destiny and determines the hour for life and death.

Norsk Magazin for Lægevidenskaben, Oslo

87: 169-256 (March) 1926

*Extrasystoles. N. B. Koppang.—p. 169.
*Quinidine in Treatment of Arrhythmia. H. F. Høst.—p. 183.
Three Gynecologic Operations. G. Schaanning.—p. 187.
Degeneration of Spinal Cord in Pernicious Anemia. F. Harbitz.—p. 192.
Proposed Revision of the Penal Code. H. A. T. Dedichen.—p. 199.

Extrasystoles.—Koppang's clinical and experimental study of arrhythmia with extrasystoles has convinced him that the premature contractions may be like those induced in animals by artificial irritation. Or they may be due to exaggerated automatic functioning of the subordinate centers; in this case, they should be called parasystoles. He thinks this assumption of parasystoles, from a rhythmical irritation affecting the secondary and tertiary centers, supplementary to the regular impulse from the chief center which induces the normal contraction, throws much light on the physiology of the heart. He has never seen dyspnea in persons with recurring attacks of extrasystoles for years, except when there was myocarditis; no secondary phenomena ever developed, except dizziness, even in the severest forms of extrasystoles.

Quinidine in Heart Disease.—Høst was disappointed in the action of quinidine. It relieved only four of the nine patients with fibrillation and only four of the six with extrasystole arrhythmia. In only two of the total eight with rhythm regulated by the drug, was the effect permanent. In one of the other cases, symptoms suggesting embolism developed, possibly due to the drug, and in four other cases, dizziness, precordial oppression, vomiting or diarrhea seemed to be by-effects of the quinidine. One patient died in a tenth recurrence of attacks of the Adams-Stokes syndrome which had developed during the quinidine treatment, probably from the depressing influence on the conducting apparatus.

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BOUNDARIES OF THE PUBLIC HEALTH FIELD *

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At no time in the world's history has there been, as now, such widespread recognition of the paramount importance of the public health to the welfare and happiness of the people. Nations, states, communities, official and nonofficial agencies, and hosts of individuals are demanding and obtaining the adoption of measures and means for the protection and betterment of physical and mental health to an extent that could not have been considered possible a quarter of a century ago. The growth of public health activities constitutes one of the striking phenomena and characteristics of the present generation. Public health has become the password which opens national doors to those who would promote also the cause of religion, education and international trade. It is the one subject which internationals, however uncongenial and mutually suspicious, can and do discuss without acrimony, political chicanery and hostility engendered in real or fancied wrongs. It is an ever-strengthening bond between nations, the importance of which is too little appreciated by the world at large. The underlying reasons for this widespread interest in public health are well known. Among them are the proved accomplishments of science in the field of preventive medicine based on new discoveries in bacteriology, chemistry and physics, vastly improved personnel in the ranks of public health officials, effective and far-reaching methods of public health education, and the result of millions of physical examinations made on recruits for military service in the Great War, which brought out, as nothing else could do, that as a nation our standard of physical fitness is very far below that which it should be, if we are to maintain the place among nations which natural environment, opportunity and good fortune have made for us.

No body of laws has been so universally upheld by the highest courts in this country as those relating to public health; and, notwithstanding the grave accusation, in some respects warranted, that we are not a law abiding people, in those states and communities in which laws and regulations affecting the public health are wisely drawn and efficiently administered, no people on earth show greater readiness to comply with their provisions, even when such compliance entails a good deal of personal restraint, discomfort and financial sacrifice.

The growing prestige and power conferred on public health officials bring with them new and greater responsibilities together with a mighty army of individuals, groups and organizations, desirable and undesirable, who, for many diverse reasons, creditable and discreditable, well meaning but often ridiculous, find it expedient to enlist under the banner of public health.

Nearly every human activity, with but little stretch of the imagination, may be interpreted as having some relation, however remote, to public health, and therein lies an ever-growing menace against which health officials should be constantly on their guard. Amendments to the public health law are being sought annually of state legislatures in increasing numbers, and the quantity of bills introduced for that purpose by individuals and organizations far outnumbers those emanating from and sanctioned by health officials, so that the state health officer finds it necessary to attend innumerable hearings at each session of a state legislature, and to use his official and personal influence to defeat undesirable and often foolish bills introduced on the plea of public health necessity. Fortunately, most state legislators and governors are learning to sift "the wheat from the chaff," so that few such measures become law. Were it not so, health laws would be so cluttered up with unnecessary and impracticable provisions that their administration would be impossible and public health progress would receive a check which only a drastic return to sanity and common sense would overcome.

THE FIELD OF PUBLIC HEALTH

The legitimate field of public health has been, by popular consent, enormously extended. It should continue to have a natural and steady growth as public necessity and human welfare demand; but let us beware of overloading health administration with duties and functions which will inevitably weaken efficiency in its undisputed sphere and which can as well, if not better, be undertaken by other branches of government or nongovernmental agencies.

The more general and less specific the duties imposed by law on public health officials, and the greater latitude afforded to exercise their own judgment and common sense, the better will they be able to serve the public, and with far less friction. The health commissioner of the state of New York is given power to "take cognizance of the interests of health and life of the people of the state, and of all matters pertaining thereto." I should be quite willing to let the law stop there and dispense with the remaining elaborate list of specific duties provided for. I realize, however, that the enumeration of such duties serves a useful purpose in the field of public health education, and as

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* Chairman's address, read before the Section on Preventive and Industrial Medicine and Public Health at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

a necessary check on a health official who might desire to take a czarlike attitude in the administration of his office.

Without attempting to discuss what specific functions and duties should or should not be assigned to the health administration, it may be of value to note briefly certain activities of government, the proper agency for the conduct of which frequently gives rise to differences of opinion. The police power, inherent in public health law, proves an irresistible attraction to lawmakers who desire to forward this or that pet project for themselves or constituents; but it must not be forgotten that police officials, also, have their duties and responsibilities, which health officers can wisely afford to leave in their hands. The constant pressure being brought to bear to place on health authorities legal responsibility for the control of narcotic drugs is a case in point. This, in my opinion, is and should remain a police matter, notwithstanding the plea that it concerns the public health. There is no more reason for compelling health officials to undertake this work than to place on them responsibility for the enforcement of the laws relating to the control of alcohol.

Health and morals are not infrequently interdependent, notably in the case of venereal disease; but the regulation of morals may well be left to spiritual advisers, those who are or should be responsible for the bringing up of the young in the home, to the schools, to public opinion and, when immoral acts constitute infringement of the penal laws, to the police authorities. If any of these agencies fail to produce results, experience has shown that federal and state lawmakers can always be counted on to enact legislation, however futile, for the control of morals.

The licensure of physicians and other professions dealing with the human body is, in New York and I believe elsewhere, embodied in the public health law, in spite of the fact that the section of the law relating to it is administered solely by the state department of education as, in my opinion, it should be, at least until such a time as all the states and territories agree to divest themselves of their prerogatives in this respect and transfer them to the federal government. The present system of state licensure, based on every variety of standard, produces chaos and brings on the nation, as a whole, disrepute as to standards of professional education and qualifications. Yet even though health departments and bureaus are not responsible for the administration of the medical practice act, they should at all times be ready to support and strengthen it, protecting it from the constant onslaughts of unqualified and unscrupulous persons who seek, in growing numbers, to vitiate and weaken its provisions. It is questionable how far any state will succeed in upholding the legal qualifications for the practice of medicine or even, as more than one has done, in salvaging from the wreck the pitiful remains of what was once a law which protected the public health, except with the backing of public health officials and the plea of necessity to protect the public health.

Until the general attitude of the American people toward public officials undergoes a radical change, the health officer must labor under the disadvantage of being regarded as just one of the army of office holders, whose motives are frequently open to suspicion. I have so often expressed the opinion that the health official, however partisan his political views and affiliations, should never permit his official acts to be governed by them and that, conversely, politicians should keep their hands off the health officer, that it is not necessary now to elaborate this creed. There can be no question that politicians with vision and, by virtue of it, statesmen, are coming to realize more fully that interference with public health is bad politics, and that promotion of legitimate health activities is good statesmanship.

This restriction of the power of the health officer to give the highest service, to broaden the field of public health, or even to maintain and improve the standards of administration, may be and frequently is largely overcome by the backing and cooperation of two great groups; namely, the nonofficial health organization and the organized medical profession. The former, through a large membership consisting of representative persons in many communities who are earnestly trying to promote this or that branch of human welfare, are in a position to render the greatest service to the health officer by enlisting the interest, the cooperation, and the personal and financial support of the general public for his program, and by setting up demonstrations and inaugurating health campaigns.

The criticism formerly directed against these organizations was largely based on their multiplicity and seeming lack of cooperation among themselves and with local officials, which frequently led to confusion of purposes, wasted effort and petty jealousies regarding the bestowal of credit for this or that accomplishment. This unfortunate condition has been largely corrected, I believe, by the elimination of unnecessary organizations, the consolidation of the really useful ones, the cooperation between the great national organizations which the public recognizes as worthy of financial and personal support, and the realization, on the part of such organizations, that nonofficial health work in order to be effective must always recognize the rights, powers and duties of public health and other local government officials and work with them. Demonstrations and campaigns for promoting various branches of the public health should always be conducted with the end in view of turning over work which has been proved feasible and desirable to the appropriate officials. The prolonged and permanent assumption of governmental functions by unofficial bodies, when and if the governing officials are financially and personally able to undertake them, is in my opinion a mistaken policy and one which inevitably must defeat the end sought; namely, to instruct a community as to its health needs and the officials of that community as to the methods by which they may best discharge their obligations toward the people whom they serve.

PUBLIC HEALTH AND THE MEDICAL PROFESSION

There should be no conflict between public health officials and the medical profession. The field of activity of the former is that of preventive medicine, and no one who has given any thought to the subject can doubt that largely in the same field must the medical profession find, in the future, its chief usefulness, public support, influence and satisfaction. Under the system of public health administration prevailing in this country, the general practitioner must be counted on to carry out the proved and accepted principles of preventive medicine. He should be a potential health official in his knowledge of such principles and in his willingness, when occasion arises, to put them into practice to the best of his ability. There is every reason to believe, that, while public health work has been a large factor in reducing the incidence of many infectious diseases which formerly fell into the hands of the general practitioner and made up a good part of his practice, other fields of professional activity have been opened to him by the extension of official and unofficial public health work which have more than compensated him for the financial loss incurred for the benefit of the public health.

While the specialist in the various branches of medical science may prove of the greatest service in preparing the general practitioner to enter the new field of preventive medicine well equipped for a many-sided task, the former cannot be expected to do the actual work which entails at least a practical knowledge of most of the so-called specialties.

The tremendous growth of knowledge in the field of medical science during the last twenty-five years has created a problem in medical education, the solution of which is of paramount importance to the future of medicine. It would sometimes appear that the rank overgrowth of specialization and the failure on the part of modern medical schools to turn out well rounded general practitioners are a sign of despair of being able to meet the situation, and yet the number of general practitioners must be increased at the expense of the specialist and restored, if not quite to the former position as guide, counselor and friend to all who sought their advice, to a new and broader field of activity, that of preventive medicine. The public of today is clamoring for knowledge of how to keep well and, in its quest for light, is seeking the advice of many false gods.

Postgraduate medical courses, preferably given under the auspices and supported by the medical profession, are of fairly recent origin. Judging by the interest taken in them, especially by those physicians who have not ready access to large medical centers, they are filling a long felt need in keeping the general practitioner abreast of the times. These courses should be increased in number and efficiency throughout the whole country. Recognizing the growing demands on practitioners for knowledge of preventive medicine, the medical schools should, at the earliest possible moment, so rearrange their curriculums as to emphasize not only the importance of methods of specific prevention of disease, which heretofore has unwisely been regarded as the sole and peculiar prerogative of health officials, but should be prepared to turn out also graduates with a sound knowledge of the normal functions of the human body, reasonable ability to recognize departures from the norm and to give advice as to their correction, prevention and treatment. Such men will find ample opportunity for the exercise of their knowledge and, I believe, with adequate financial compensation. If we are to make any marked progress in maintaining and improving the health of the nation, their work is absolutely essential as an adjunct to that of public health officials. Unless we are willing to delegate to the state all matters having to do with the public health, and bring about thereby a kind of socialistic government and most undesirable paternalism, the medical profession must be prepared to do its part in the field of preventive medicine, and there is growing evidence that it is more than willing to do so.

HEALTH LEGISLATION AND CAMPAIGNS IN NEW YORK

As an evidence of the possibilities and value of cooperation between public health officials, nonofficial agencies and the medical profession, I may be permitted to give in closing, as an example, the campaign now being conducted in New York State under the slogan "No more diphtheria in the state by 1930." It is believed that with the active immunization, by toxin-antitoxin, of a large part of the children of the state, especially those of preschool age, this seemingly impossible task may come very near accomplishment. The campaign is being conducted under the leadership of the New York State and New York City commissioners of health, in cooperation with the state committee on tuberculosis and public health of the State Charities Aid Association, life insurance companies—frankly for business reasons—mayors and other city officials, the press, many churches and prominent individuals. It has the official indorsement of the state education department, the state medical society and the constituent county medical societies. The campaign could not possibly succeed without the participation of all these groups, the departments of health and education assuming responsibility for planning the campaign through their own staff, the local health officers and medical school inspectors; private organizations for supplying extra funds and personnel and arousing public interest and participation, and the medical profession for actually undertaking a large part of the work of immunization.

Another example of the value of cooperation is shown by the introduction in the 1926 state legislature of a radical measure[1] for the protection of the medical practice act against unqualified and unlicensed persons, who are overrunning the state. Notwithstanding the fact that its provisions place on the physicians of the state annoying duties, some financial outlay and actual curtailment of their rights and privileges now granted by the state, the law has received the indorsement of the great majority of the organized medical profession. Its enactment was made possible only by hard work on the part of the state education department, the state and city departments of health, and representatives of the state medical society and of unofficial public health agencies. Despite the cynical and oft repeated charge of the members of the numerous cults and of other charlatans who have violently opposed this measure as detrimental to their interests, and who have asserted that the medical profession is backing it purely as a matter of self-interest, I am very glad to believe that the only motive for this favorable attitude of state physicians is that of protection of the public health and their own loved and honored profession from the attacks of the motley rabble which, for its own selfish ends, seeks to destroy the confidence of the people in the proved truths of science and in those who alone can carry them into effect for the welfare and happiness of humanity—the legalized medical profession.

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[1] Signed by the governor following a public hearing, May 17, 1926.

The Significance of Greek Education.—The significance of Greek education lies in the fact that here first is found a developing conception and standard of life, consequently a conception of education which enlarges through successive periods and in which change is tolerated and development of the individual provided for. Growth or modification in social standards results from variation by individuals from formulated customs; progress comes where such variations are not only tolerated but seized on and made permanent if deemed serviceable. For the first time, then, in Greek education, is found a type in which the individual is neither unconsciously nor consciously suppressed. On the contrary, some expression of individuality is thought compatible with, even desirable for, social stability and welfare.—Monroe: *A Text-book in the History of Education*, p. 52.

IMPORTANCE OF EARLY DIAGNOSIS AND TREATMENT OF LARYNGEAL TUBERCULOSIS *

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The successful arrest or cure of pulmonary, as well as laryngeal, tuberculosis depends largely on an early diagnosis and proper treatment. Almost every advanced, or moderately advanced, case of tuberculosis has passed through a curable stage. If the diagnosis can be made during this early, curable stage and proper treatment started, the patient has from seventy to eighty chances in a hundred of a permanent cure or, at least, of an arrest of the disease. Many patients suffer from failing health caused by pulmonary tuberculosis for from one to four years before the proper diagnosis is made. This is a serious reflection on the intelligence, training and diagnostic skill of followers of the healing art. Unfortunately, some of these, though they have an M.D. degree, do not avail themselves of modern diagnostic methods.

Most patients with early laryngeal tuberculosis complain only of a slight huskiness of the voice after getting up in the morning. This may be relieved by clearing the throat, by coughing or by talking. Later on it may be more persistent and last half or all of each day. The patient is conscious of a greater effort in talking, and realizes that the larynx becomes tired easily. If these "danger signals" are persistently ignored, marked hoarseness or even aphonia is a likely consequence. While it is true that we occasionally find advanced laryngeal lesions with almost a complete absence of subjective symptoms, as Solenberger[1] and others have previously mentioned, such exceptions to the rule do not justify negligence or delay in making an early laryngoscopic examination, by the indirect method, because as a rule this can be easily made for most patients. Mullin[2] has urged early laryngoscopic examination in all tuberculous patients. If necessary, a better view can be obtained, under moderate local anesthesia in adults, by making use of Jackson's or Mosher's direct laryngoscope, Lynch's suspension laryngoscope, or Haslinger's directoscope.

Vascular changes are frequent even before a positive laryngeal diagnosis can be obtained, and should suggest a complete and thorough examination of the lungs if this has not been made. The general pallor of the mucous membranes of the entire upper respiratory tract should draw attention at the first examination. Often pinkish red mottled areas dot the pale mucosa of the larynx. If the patient is coughing a great deal, the larynx may be hyperemic and, in cases of longer duration, congested. If the cough is not relieved by bed rest, rest of the voice (silence), sedatives, etc., the laryngeal irritation increases, and the danger of laryngeal tuberculosis is made greater. Dr. Emil Mayer says that he was led to suspect tuberculosis in a patient with mottled pale and pink areas of the soft palate.

Infiltration over the posterior laryngeal wall is a common early symptom and may be found with few, or even without any, subjective symptoms. If the infiltration becomes more extensive, subjective symptoms are usually present. Extensive infiltration of the arytenoids, false cords, and cushion of the epiglottis represents a more advanced stage of the disease. Infiltration of the arytenoids produces the so-called club-shaped deformity which has been designated as pathognomonic of laryngeal tuberculosis. However, this deformity can be produced by other diseases, such as syphilis, actinomycosis and carcinoma. The infiltration is often so slight that it is easily overlooked unless the laryngologist is a careful observer. A careless or hasty examination will hinder an early diagnosis. Thoroughness is absolutely essential.

Tuberculomas, or tuberculous granulomas, are irregular, pale, rough, more or less round, cauliflower-like tumor masses. These often spring from the anterior or posterior wall, the true or even the false cords. They resemble a papilloma and can easily be mistaken for one, especially if the examination ends with the lower border of the larynx. These tuberculomas are often only 1 or 2 mm. in diameter at first and may increase in size very slowly. If attached to the free edge of one of the cords, the tumor mass is usually easy to see; but if attached to the anterior wall, below the true cords, it can easily be overlooked.

Ulcers are usually superficial and are far more often chronic than acute. Tuberculosis is a disease which nearly always progresses very slowly, and this is particularly true of the early stages. In the late stages, the disease some times progresses very rapidly. Deep ulcers may form from extension of the superficial ones, but as a rule the breaking down of deep tubercles produces the deep ulcers. Ulcers rarely occur early, but superficial ulcers are more frequently seen than the deep. Spraying the larynx with a mild alkaline antiseptic helps to remove sputum. If this is followed by a spray of 1 or 2 per cent aqueous solution of fluorescein, the ulcers will be stained a light green, which makes them easier to recognize.

Edema has been called, by Sir St. Clair Thomson[3] and others, pseudo-edema. It occurs when the tubercles are either large enough, numerous enough, or both large and numerous enough to interfere with the blood and lymph supply to that part of the larynx. The arytenoids are particularly prone to edema, and often later the epiglottis. Edema of the epiglottis produces the so-called turban shape. Edema, if at all extensive, is a reasonable assurance that the disease has existed for many months in the larynx and indicates an advanced stage. There are, of course, some exceptions to this. If the edema is confined to one arytenoid, deep cautery punctures may prevent extension.

Nature tries to produce fibrosis as the best means of curing tuberculosis, so that extension of the disease often goes on hand in hand with the healing process. The ultimate outcome naturally depends on which one predominates: fibrosis or extension. Fibrosis usually forms part of the laryngeal lesion, if the disease has been present for any length of time, and can be recognized in the arytenoids and the epiglottis. Almost every healed or arrested larynx will also show fibroid changes. Areas of calcification, so common in the lungs, are found less frequently in the larynx post mortem. Carmody[4] says, "Where there is much scar tissue we may and frequently do have syphilitic infection."

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* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Solenberger, A. R.: Prophylaxis of Laryngeal Tuberculosis, Tr. Am. Laryngol., Rhinol. & Otol. Soc. **18**: 480-489, 1912.

2. Mullin, W. V.: Indifference of Laryngologist Toward Tuberculous Laryngitis and the Tuberculosis Problem, J. A. M. A. **75**: 300 (July 31) 1920.

3. Thomson, St. Clair: Tuberculosis of the Larynx: Ten Years' Experience in a Sanatorium, London, His Majesty's Stationery Office, 1924.

4. Carmody, T. E.: The Treatment of Laryngeal Tuberculosis, Tr. Am. Laryngol., Rhinol. & Otol. Soc., 1921, p. 274.

Perichondritis, chondritis and necrosis all represent such advanced lesions that these are usually easy to recognize. Irregular notches in the epiglottis are not infrequent and represent the three stages or lesions just mentioned. Late lesions often make the diagnosis easier, but, unfortunately for the patient, the fatal termination is almost as easy to predict. The last few weeks or months of agony, caused by severe pain on swallowing, with the hunger, thirst and rapid emaciation which this pain produces, are a lesson not soon to be forgotten by any conscientious physician. A few suffering patients pleading for relief offer the strongest and most convincing argument I know of for an early diagnosis.

Any method or form of treatment is likely to fall far short of the mark unless the pulmonary disease receives proper consideration at the hands of a chest expert who is thoroughly trained and experienced in the diagnosis and treatment of pulmonary tuberculosis. Brown[5] advocates this. The roentgenologist renders valuable aid by taking stereoscopic roentgenograms of the chest, first, for diagnosis, and, secondly, for noting the progress from time to time. The bacteriologist aids greatly by making sputum examinations. The chest expert must also direct the bed rest, diet, general medication, etc., because the pulmonary disease must always receive first consideration. Dean,[6] Brown,[5] Minor[7] and others have advocated the importance of the pulmonary disease and the necessity for not disregarding this at any time. A complete general physical examination, and especially the examination of the chest, roentgenograms of the chest, serologic examinations, including at least the blood Wassermann test, urinalysis, blood count and sputum examinations should all be made before the laryngologist can decide the cause of the laryngeal lesion. Syphilis, tuberculosis and carcinoma have all three been found and diagnosed as present simultaneously in a patient by such able laryngologists as Beck and Pollock.[8]

In making the differential diagnosis, syphilis, actinomycosis, carcinoma, chronic catarrhal laryngitis, papilloma, granuloma, lupus and trauma, must all be excluded. Tuberculosis is rare in the larynx before the age of 20 and after 45. Syphilis is also found most frequently between 18 or 20 and 45. Actinomycosis may be found at almost any age; but it is rarely encountered except in farmers, stockmen, butchers and tanners. Carcinoma is rare before 40 or 45 years of age. Chronic catarrhal laryngitis is found most frequently in patients who use the voice a great deal and at almost any age. Papilloma is more frequent in children than in adults. Lupus is common in Europe, but rare in this country. Granuloma caused by trauma may occur at any age, but is more frequent in men than in women. Pain is usually not an early symptom of tuberculosis, syphilis and other laryngeal diseases; it occurs earlier, as a rule, with syphilis than with tuberculosis. The larynx is red more frequently when the laryngitis is caused by syphilis, carcinoma, chronic catarrhal laryngitis or actinomycosis than when caused by tuberculosis. Papilloma and granuloma are usually pale. Cough, with or without sputum, is nearly always suggestive of pulmonary tuberculosis. However, any laryngitis may produce cough, especially if there is an acute irritation. This acute irritation should always be allayed by rest and sedatives before one attempts to complete the diagnosis.

The general physical examination, roentgenograms of the chest, the Wassermann reaction, biopsy, age, occupation and history must all be taken into account in making the differential diagnosis.

Differential Diagnosis

Tuberculosis	Lupus	Syphilis	Carcinoma
Hoarseness rather early	Hoarseness rather late	Hoarseness rather early	Hoarseness quite early
Aphonia late	Aphonia quite late	Aphonia late	Aphonia early
Pain late	Pain very late	Pain quite early	Pain usually very early
Dysphagia rather early	Dysphagia late	Dysphagia quite early	Dysphagia very early
Odynophagia rather late	Odynophagia late	Odynophagia early	Odynophagia quite early
Sputum contains tubercle bacilli	Rarely any sputum	Rarely any sputum	Rarely any sputum
Wassermann negative	Wassermann negative	Wassermann positive	Wassermann negative
Biopsy shows giant cells	Biopsy shows giant cells	Biopsy shows Spirochaeta pallida	Biopsy shows carcinoma
Roentgenograms of chest positive	Roentgenograms of chest negative	Roentgenograms of chest negative	Roentgenograms of chest negative
History of pulmonary tuberculosis	Lupus often on face	History of syphilis	History of 3 preceding often negative
Age 20 to 45	Age 15 to 50	Almost any age	Most frequent past 40 years
Ulcers occur usually late	Ulcers less frequent	Ulcers very frequent	Ulcers occur late usually
Mucous membrane pale	Mucous membrane hyperemic	Mucous membrane hyperemic	Mucous membrane hyperemic
General health poor	General health often good	General health often good	General health often poor
Not benefited by anti-syphilitic treatment	Not improved by anti-syphilitic treatment	Improved by anti-syphilitic treatment	Not benefited by anti-syphilitic treatment

TREATMENT

Climate plays a very important part for those who can afford the change from their own home city. Edson[9] has emphasized the importance of climate. Fresh air and sunshine are not often available in the average large city except on occasional days or half days. High altitudes stimulate phagocytosis and thus increase the patient's resistance to the disease. This phagocytosis, combined with plenty of fresh air twenty-four hours each day, and sunshine at least a part of most of the days, makes the Southwest desirable for the treatment of both pulmonary and laryngeal tuberculosis. Sunshine and fresh air have a very desirable effect not only on the physical well being of patients, but on the mental well being too.

If there is pain, narcotics must often be used in some form, such as hypodermics of morphine, to allay the distress. Weak cocaine solutions of 2 or 3 per cent may be sprayed into the larynx just before a meal to allay pain. Twenty per cent chaulmoogra oil dropped into the larynx several times each week, or inhalation of compound tincture of benzoin from a croup kettle, helps some patients. If there is very much pain, injections of alcohol into the superior laryngeal nerve of either one or both sides will often give relief for a few weeks. However, these are all palliative remedies;

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[5] Brown, L.: General Measures in Treatment of Laryngeal Tuberculosis, Ann. Otol., Rhinol. & Laryngol. **30**: 904-911 (Dec.) 1921.

[6] Dean, L. W.: Treatment of Tuberculous Laryngitis by Suspension Laryngoscopy, Ann. Otol., Rhinol. & Laryngol. **30**: 898-903 (Dec.) 1921.

[7] Minor, C. L.: Laryngeal Tuberculosis from the Point of View of a Pulmonary Specialist, Ann. Otol., Rhinol. & Laryngol. **30**: 870-887 (Dec.) 1921.

[8] Beck, J. C., and Pollock, H. L.: Multiple Affections of the Larynx, Tr. Am. Acad. Ophth. & Otolaryngol., 1920, p. 215.

[9] Edson, C. E.: Climate in Treatment of Laryngeal Tuberculosis, Ann. Otol., Rhinol. & Laryngol. **30**: 888-897 (Dec.) 1921.

they should not be used if curative treatment can be carried out. Palliative remedies are often helpful as an aid or as an adjunct to curative treatment during some stage of the disease.

In the early stage of the laryngeal disease, absolute silence is best, even though it is rather severe at first, from the patient's point of view. Whispering may accomplish the desired result, but the privilege of whispering is apt to be abused. If allowed to whisper, patients are likely to talk. A pencil and scratch pad often serve the purpose better than whispering. Each patient presents an individual problem in this respect, and what will do for one will not do for another.

Heliotherapy offers one of the best methods of treatment: first, because the sun's chemical or actinic rays are curative, and, secondly, because this treatment can be used by the patient and serves as an occupational therapy as well. At the beginning the treatment should be supervised by the laryngologist or by a nurse skilled in this work. Forster,[10] Chapman [10] and their associates have perfected a solar laryngoscope which permits the chemical or actinic rays to reach the larynx. Glass has been done away with, because it absorbs almost all except the heat rays. The Verba solar laryngoscope is so made that it can be attached to the back of a chair or to the patient's bed, but the chair is better. With a little practice, most patients become quite expert in directing the sun's rays into the larynx. A patient is able to get a good view of his own larynx, and this gives him greater interest in what the laryngologist is trying to accomplish, and thus he becomes more cooperative. At first the larynx should be exposed for one-half minute each day for a week, but after gradual increase of the length of each treatment, over a period of several weeks, the larynx will tolerate a ten minute exposure each day or even twice each day. Some patients do well if the larynx is exposed for twenty minutes twice daily. Heliotherapy is more effective than irritating applications to the larynx and is objected to much less by the patient. It should be used more than it is.

Lactic acid, in strengths of from 5 to 30 per cent aqueous solution, is useful for application on a cotton wound applicator to ulcers. Deep ulcers are rarely cured, but small superficial ulcers can sometimes be caused to heal by a few applications made at intervals of from seven to ten days. The larynx should be cocainized before the application is made. Applications frequently repeated often do more harm than good. Sir St. Clair Thomson [3] does not write very favorably of lactic acid and other irritating laryngeal applications.

Solution of formaldehyde in from 1 to 5 per cent aqueous dilution is preferred by some to lactic acid and has been used on good authority. I myself prefer lactic acid, although I use even lactic acid less and less frequently.

The cautery is the best single method of treatment we have to date. Its value cannot be disputed. Small infiltrations rarely require treatment other than rest. A large infiltrated arytenoid usually requires one or two punctures with a sharp cautery point. Superficial ulcers that have not responded to other methods will often heal promptly if cauterized. Deep ulcers should be cauterized, if anything is to be done at all. Tuberculomas should be removed by suspension, and then the base should be cauterized. Areas of pseudo-edema usually respond well to the cautery. Dean [6] and Arrowsmith [11] prefer to cauterize by suspension, while Sir St. Clair Thomson [3] and Greene [12] prefer the indirect method.

If the greater part, or all, of the larynx is involved by ulcers, whether superficial or deep, by pseudo-edema, perichondritis, chondritis or necrosis, usually any and all methods of treatment are of no avail. This, of course, only serves to emphasize again the importance of early diagnosis and treatment. Extensive laryngeal involvement does not always mean extensive tuberculosis of the lungs, but it is very apt to, and it nearly always means a fatal termination. Almost any laryngologist of experience has seen in his own practice, or that of some colleague, an arrested late case of laryngopulmonary tuberculosis. However, such examples are entirely too rare to justify procrastination in making an early diagnosis and carrying out proper treatment.

The cautery point should be used at a white heat and should be gently, but firmly, plunged into the area to be cauterized. At a red heat the eschar adheres to the cautery and leaves a bleeding wound. The object in using the cautery is to produce fibrosis and not to destroy the tubercle totally at the time. Total destruction is unnecessary and is too radical to yield the best results in an organ as delicate as the larynx. Local anesthesia, when thoroughly and systematically carried out, is usually very satisfactory. General anesthesia is but rarely required. Ether must always be avoided, because it is too irritating to the lungs. Nitrous oxide and oxygen are preferable if a general anesthetic is to be used at all.

Local anesthesia can be produced best by the hypodermic administration of morphine, from one-sixth to one-fourth grain (10 to 16 mg.), one hour before the time set for the cauterization. Sodium bromide, 20 grains (1.3 Gm.), taken by mouth may serve the purpose, but is less certain in its action. A 10 per cent aqueous solution of cocaine will produce excellent anesthesia. It should be cautiously applied and not sprayed into the larynx. I like to anesthetize with Bruenings' laryngeal syringe. This has a straight cannula for direct, and a curved cannula for indirect, administration. The cannulas are perforated at several places near the tip and at the tip. The ends are milled so they can be wrapped with cotton. Every few minutes a few drops of the freshly prepared cocaine solution can be forced, from the syringe, through the cannula into the cotton for additional applications to the larynx. At first it is best to swab gently the epiglottis, pharynx, hypopharynx and rim of the larynx with the cotton-tipped cannula, being sure that the cotton is kept saturated with the cocaine solution. As soon as there is superficial anesthesia, deeper anesthesia can be produced by dropping the solution into the larynx while the patient says "Ah." While the entire larynx should be well anesthetized, the parts previously selected for cauterization should receive more cocaine than the rest of the larynx. From fifteen to twenty minutes' time can be profitably spent in producing anesthesia. After a wait of from fifteen to twenty minutes, following the last application, the cautery can be applied, as a rule, without any difficulty. Nervous, apprehensive patients may require more morphine, more cocaine, or both.

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[10] Forster, A. M., and Chapman, S. J.: Heliotherapy in the Treatment of Tuberculous Laryngitis, Colorado Med. **22:** 90-93 (March) 1925.

[11] Arrowsmith, H.: Present Day Aspects of Laryngeal Tuberculosis, New York M. J. **106:** 245-248 (Aug. 11) 1917; Tr. Am. Laryngol. A. **35:** 282-290.

[12] Greene, J. B.: The Electrocautery in the Treatment of Laryngeal and Pharyngeal Tuberculosis, Am. Rev. Tuberc. **10:** 73 (Sept.) 1924.

Reassurance that there will not be any pain inflicted often helps a nervous patient.

Amputation of the epiglottis, for epiglottidean tuberculosis, affords some patients gratifying relief from severe pain occasioned by swallowing. Patients for this operation must be very carefully selected, and the operation must be done reasonably early if any real good is to be accomplished. The patient with little or no involvement of other parts of the larynx than the epiglottis is usually the one best suited for this operation, according to Lockard.[13]

Anesthesia should be produced just as recommended for cauterization, except that more of the cocaine should be applied about the base of the tongue and epiglottis, and less to the interior of the larynx.

The epiglottis may be amputated by either the direct or the indirect method as the laryngologist prefers. Punch forceps, the cold-wire snare, and the cautery snare have all been recommended and used. The punch forceps used by the indirect method are quite satisfactory.

CONCLUSION

An early diagnosis of tuberculosis of the lungs and larynx is just as important as an early diagnosis of carcinoma of the larynx. Each patient should be thoroughly studied and examined before the diagnosis is completed if we expect to lessen materially the appalling death rate of tuberculosis. Modern diagnostic methods not only make an early diagnosis possible and often easy, but make an early cure more certain. To wait for late signs and symptoms is unpardonable.

Physicians' Building.

ABSTRACT OF DISCUSSION

Dr. Hill Hastings, Los Angeles: I have come more and more to rely on the pale in filtration areas in the larynx rather than on acute redness. The place where I find them most frequently is at the posterior commissure. In all lesions of the larynx the thing that impresses one for or against a good prognosis is the condition of the patient. A tuberculous larynx does not cause death, as a rule. Of course, third stage tuberculous cases are hopeless so far as the epiglottis is concerned. I have seen patients in the second stage of tuberculosis who had developed good resistance in whom the epiglottis frequently without pain would melt away, leaving a good scarred stump. We do no surgical work for such patients. In my practice we do less and less surgery for tuberculosis of the larynx. Rest seems to be the main thing. It is surprising how many tuberculosis sanatoriums do not have a competent laryngologist to examine patients. That should not be the case. Early diagnosis cannot be made in general practice; it must be made in a sanatorium. Laryngologists should seek positions on staffs and help in making early diagnoses.

Dr. Joseph C. Beck, Chicago: While I do not treat many cases of tuberculous laryngitis, the work of Wesely in the Vienna clinic in the use of the carbon light has revealed a method of treatment that I would not have believed if I had not tried it myself. Cases almost as bad as the one in which Dr. Hastings said he would not do surgery have been sent to me for injection of the superior laryngeal nerve. I gave treatment with the carbon lamp. The actual results were astonishing. Another thing I want to refer to is multiple infection—cancer, syphilis and tuberculosis. I have had come under my observation cases of laryngectomy performed on a tuberculous patient who had neither cancer nor syphilis, only tuberculosis. Biopsy should be done to prove there is no cancer, regardless of the bugaboo that biopsy in cancer spreads the disease.

Dr. W. V. Mullin, Cleveland: If any one will spend one-third the time making sketches that Dr. Spencer has put in completing these slides, he will have no difficulty in making a diagnosis. Tuberculosis of the larynx is difficult to diagnose, except in the advanced case. Dr. Spencer has given us the best set of slides available in America today. Of course, Dr. Spencer did not have time to emphasize all the points. I am sure that he believes in heliotherapy. I think it is one of the best aids, in connection with rest, in the treatment of laryngeal tuberculosis. I am sure that Dr. Spencer would not want us to have the idea that just as soon as he makes a diagnosis he gets out his suspension apparatus and cauterizes or removes the epiglottis. They are given careful study from the general and local standpoint. I am in accord with Dr. Hastings—I never got any results from the removal of the epiglottis. I long ago ceased to do it. One thing Dr. Spencer did not emphasize was the classification of his cases in relation to their general condition to which the tuberculous laryngitis is secondary. The primary condition is general tuberculosis, and the seriousness of the secondary tuberculous laryngitis will likely depend on the general condition. I do not think Dr. Spencer emphasized enough the injection of the superior laryngeal nerve in these painful cases. But rest and heliotherapy are very important.

Dr. M. D. Brown, Denver: The important thing in the treatment of laryngeal tuberculosis is rest, and we institute at the sanatorium a procedure which is not well recognized and has not been followed to a great extent and that is gastrostomy. We have performed this operation seven times. One patient lived only a few hours; several others lived for months, and one patient more than a year. We were able to give these patients absolute rest of the larynx. Dr. Spencer did not bring out the amount of pain suffered by these patients. Most of them have, in addition to the laryngeal tuberculosis, a very extensive pharyngeal tuberculosis, and that is very painful. In tuberculous cases one must keep up the patient's resistance. If unable to eat on account of severe dysphagia, they must be fed. In one case we had a gastrostomy tube in place for a year. That patient gained about 35 pounds (16 Kg.) and was perfectly comfortable. But, if we are going to do these patients the greatest good, we should do the gastrostomy early, and not wait until there is extensive ulceration of the epiglottis and arytenoids and all that.

Dr. Frank R. Spencer, Boulder, Colo.: Injection of the superior laryngeal nerve is of benefit in relieving pain, but it is not a cure. This is probably the best palliative treatment, as it often gives relief for ten days or two weeks. Amputation of the epiglottis should be done early. The first time I did an amputation of the epiglottis was in a late case, and the patient died the next day. Since then I have been much more cautious. I appreciate what Dr. Dean said several years ago, that we must not resort to surgery of the larynx unless we have the assurance of the internist that the patient's condition will permit surgery. All of the patients from whom the slides that I have just shown were made have been subjected to thorough study by internists. They have all had roentgenograms of the chest made and they have had Wassermann tests made. Each and every patient has been thoroughly studied from every point of view, as other diseases may be present.

Origin of Magnetic Therapy.—The notion that magnetism was a force capable of influencing the human body, and of being used for curative purposes, is found far back in the history of medicine, but it was in the seventh century that it became elaborated and systematized. In 1608 Rudolph Goclenius, a follower of Paracelsus, wrote of the magnetic treatment of wounds. The general curative powers of magnetism were described by Athanasius Kircher in 1643, and in 1679 William Maxwell produced a comprehensive account of magnetic therapy in which he propounded the theory that all disease is due to the withdrawal of vital fluid from the organs and can be remedied by restoring the necessary magnetic force. The theory of animal magnetism was therefore actually in existence long before the time of Mesmer, although its origin is often erroneously ascribed to him.—Hart, Bernard: *Lancet* **1**:587 (March 20) 1926.

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[13] Lockard, L. B.: Epiglottidectomy: The National Treatment of Epiglottidean Tuberculosis, Tr. Am. Laryngol. A. 1911, p. 29.

UPPER RESPIRATORY INFECTION AS A CAUSE OF CHOLERA INFANTUM *

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AND
MARK L. FLOYD, M.D.
IOWA CITY

A syndrome described under such titles as cholera infantum, alimentary intoxication and anhydremia has long been known. No universal agreement seems to exist as to etiology. In general, parenteral infection has been credited with merely a minor rôle. Some authors mention that the condition may possibly be due to parenteral infection, while others are of the opinion that such infection only ushers in the condition by lowering the patient's resistance. That parenteral infection bears a relationship to gastro-intestinal disturbances is well recognized, but that it may be a direct cause of this most severe type of disturbance has been emphasized only recently.

About a year ago, almost simultaneously, one of us[1] and Marriott[2] recorded observations to the effect that a direct relationship may exist between a certain type of acute mastoiditis and "cholera infantum." At the same time the other of us[3] stated that the same clinical picture may be produced by acute paranasal sinus infection. Our purpose in this paper is to call further attention to mastoiditis and nasal sinusitis as causes of "cholera infantum" and to record further evidence, particularly in regard to sinus disease, that these infections are at least a common cause of the clinical picture.

We are not prepared to state that infections at these sites constitute the sole cause of "cholera infantum," though it is a strange coincidence that, since we became aware of this relationship, all the cases of this affection observed by us have had upper respiratory infections as the apparent underlying cause. Our first knowledge of this relationship was gained through necropsies. In a number of instances of death from what seemed to be "cholera infantum," the only pathologic findings of importance were in connection with either mastoiditis or nasal sinusitis. That this is more than coincidence has been shown definitely in numerous instances by the exceedingly prompt recovery from the constitutional disturbance on the establishment of drainage from the site of infection. A further important feature in these cases has been that the infection is seldom obvious and is usually well hidden.

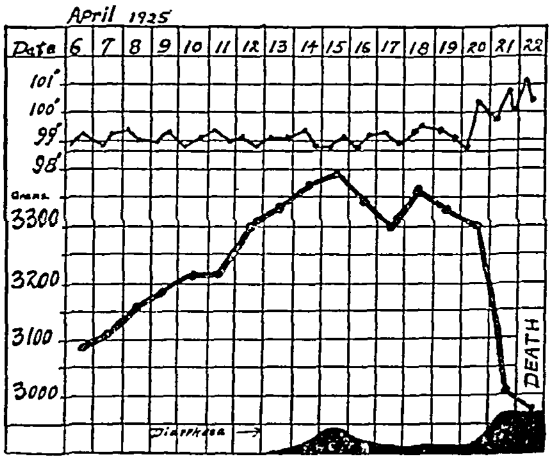

Chart 1 (case 1).—Death from "cholera infantum": right maxillary sinusitis found at necropsy.

REPORT OF CASES

Case 1.—A boy, aged 14 days, came under observation for normal feeding. Except for a purulent nasal discharge, the examination was negative. During the succeeding twenty-two days the patient thrived as would a normal child. Though the nasal discharge persisted, it drained well. A cessation of weight gain lasting five days was followed by an abrupt loss of 300 Gm. in one day. Moderate diarrhea, noted with the first disturbance in weight, became aggravated simultaneously with the acute weight loss. The condition at this time was grave, since he had rapidly become dehydrated and toxic. Since the ear drums showed a pink color, bilateral myringotomy was done. No drainage resulted. Large amounts of salt solution were administered, but the diarrhea and weight loss continued and the patient died on the following day. Necropsy revealed only a right maxillary sinusitis, thick pus being found.

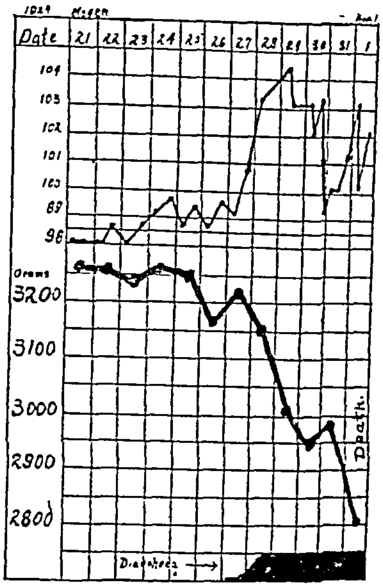

Chart 2 (case 2).—Death from "cholera infantum": bilateral mastoiditis found at necropsy.

Case 2.—A boy, after a week of stationary weight, began to lose weight rapidly. The temperature began to increase coincidentally with the beginning of the weight loss. In three days, 270 Gm. was lost, the temperature had reached 104 F., and diarrhea had by this time appeared. The ears were examined and the left drum incised, a small amount of pus draining. The patient had become greatly dehydrated, and he remained so despite the frequent administration of fluid. Diarrhea and weight loss continued. The patient died five days after the appearance of the acute symptoms. At necropsy both middle ears and mastoid antrums were filled with thick, creamy pus; the nasal sinuses were normal.

Case 3.—A girl had been thriving well until, at 2 months of age, she suddenly began to lose weight. During the first three days of this illness the temperature varied from 99 to 101 F., and 320 Gm. was lost, though no bowel disturbance was evident. A day of improvement was followed by three days of more serious illness. Diarrhea became marked, the temperature rose to 104 F., and 570 Gm. was lost. The patient became dehydrated, drowsy and ashen. Fluids administered parenterally did not influence the weight loss. On the third day of the more serious illness, examination of the ears revealed a sagging of the posterior superior canal walls. The tympanic membranes showed no definite pathologic changes. Without a preliminary myringotomy, a bilateral mastoidectomy was performed. There was thick pus under pressure in the left mastoid antrum, but none in the tympanic cavity. There was a small amount of pus in the right mastoid antrum. The illness terminated abruptly. Diarrhea ceased, the weight gain indicated the retention of parenterally administered fluids, evidences of dehydration and intoxication disappeared, and by the eleventh day after operation, all lost weight had been regained.

Case 4.—A boy had been thriving. At the age of 1 month, without apparent cause, his weight became stationary for a few days and then, coincident with the onset of diarrhea, it decreased abruptly, the patient losing 450 Gm. in five days.

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* From the Department of Pediatrics, State University of Iowa College of Medicine.

* Read before the Section on Diseases of Children at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[1] Floyd, M. L.: Masked Mastoiditis Simulating "Alimentary Intoxication" (Anhydremia), Arch. Oto.-Laryngol. 1:411 (April) 1925.

[2] Marriott, W. M.: Further Observations Concerning the Nature of Nutritional Disturbance, Tr. Am. Ped. Soc. 37:38, 1925.

[3] Jeans, P. C.: The Importance to the Pediatrist of Paranasal Sinus Infections in Infants and Young Children, Tr. Am. Laryngol. Soc., 1925; Am. J. Dis. Child. 32:40 (July) 1926.

The acute illness was marked by the appearance of intoxication, the features becoming pinched and the color ashen. Drowsiness and lethargy were marked. Dehydration was such that considerable amounts of fluid were given parenterally in the attempt to prevent death. As many as nineteen stools were observed in a day. At the height of his illness he was found to have slightly reddened ear drums and a purulent nasal sinusitis. Nonoperative treatment was directed to the sinuses, and from that day the patient's condition improved. The diarrhea became less, and finally ceased abruptly when good drainage was obtained.

Case 5.—A child, aged 2½ years, suddenly manifested diarrhea, fever and weight loss. In three days 500 Gm. had been lost, the temperature had risen to 108 F., and the patient had become comatose and greatly dehydrated. Examination revealed evidences of pus in the nasal sinuses, and a reddened but not bulging left tympanic membrane, with no bulging of the ear canal walls. The left mastoid was opened, but no pus was found. Removal of the adenoids was followed by the drainage of considerable pus into the nasopharynx. The subsequent improvement, with cessation of diarrhea and fever and the regaining of lost weight, took place in a remarkably short time.

Case 6.—A patient came under observation with a purulent nasal sinus infection with fever. A weight loss of 530 Gm. occurred during the first five days of observation. Although the patient manifested drowsiness, pallor and dehydration, diarrhea was not present at any time. Following local, nonoperative nasal treatment, recovery from the illness was rapid.

INCIDENCE

The ages of these patients have ranged from 4 weeks to 1½ years, though the majority of them were seen in the neighborhood of 5 months of age. One patient, 2½ years of age, constituted the only exception to this statement. The condition is observed with greater frequency in those seasons in which respiratory infections are prevalent; i. e., late fall, winter and spring. It is encountered in the home as well as in hospital practice. Many patients have been admitted to our wards with the clinical picture well established. Bottle fed babies seem much more prone to the condition than those breast fed.

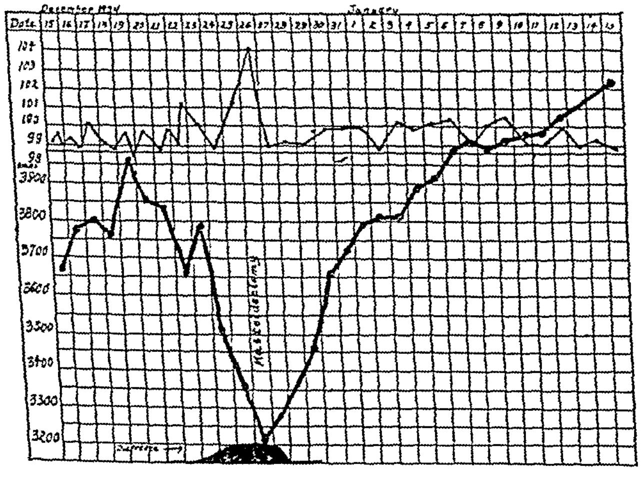

Chart 3 (case 3).—Case of "cholera infantum" in which mastoiditis was diagnosed; bilateral mastoidectomy was followed by prompt recovery.

THE UPPER RESPIRATORY INFECTION

Perhaps the most striking feature of the upper respiratory infection is its obscurity. In the case of sinus disease, nasal discharge is frequently lacking and superficial examination often reveals no pathologic condition. More thorough examination sometimes fails, and actual exploration has at times been necessary. In the case of mastoiditis, the casual observer will usually find no signs relating to the mastoid. Some redness of the drums is not infrequent. In our cases a few drums showed slight bulging, but when they were incised no drainage resulted; only occasionally did anything like free drainage follow myringotomy. Quite often the drums show no redness whatever. The sign of greatest value and one that is most constantly present is a sagging or bulging of the posterior superior canal wall. Dean[4] is of the opinion that this sign is to be observed in every case. However, others less experienced who have examined our patients have often failed to see it.

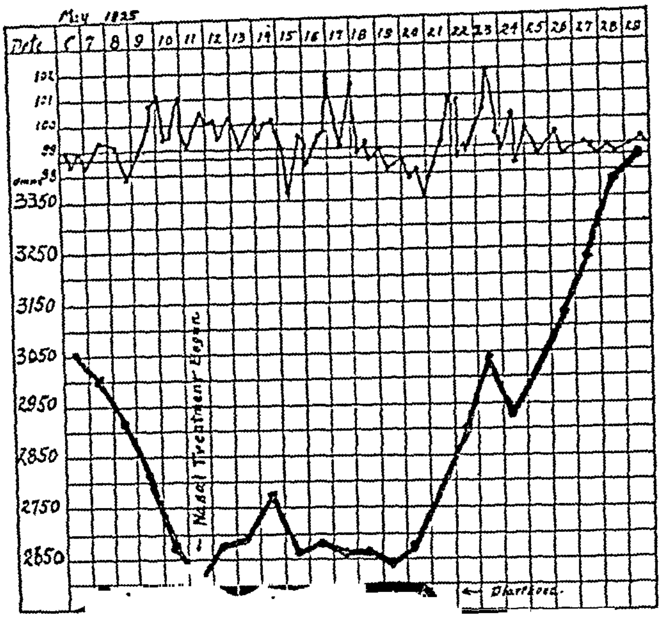

Chart 4 (case 4).—Case of "cholera infantum" in which recovery followed nonoperative treatment of nasal sinusitis.

In our cases the mastoiditis has been bilateral, with few exceptions. We have observed only one case in which myringotomy had any appreciable effect on the constitutional disturbance; in this case, good drainage resulted and recovery followed. We have also observed one instance of "cholera infantum" which seemed to be due to sinus infection and in which recovery occurred without special treatment, apparently as the result of the spontaneous establishment of drainage. We have observed a few cases in which the underlying cause of the disturbance proved to be infection both in the mastoids and in the nasal sinuses.

Many of these patients, by the time they are seen or their condition is diagnosed, have the appearance of being poor operative risks. It has been our experience that the risk is not to be lessened by delay, regardless of the character of the treatment in the interval, unless that treatment leads to drainage from the site of infection.

SYMPTOMS

The symptoms as recorded in the cases here reported and in other observed cases may be thus summarized:

The constitutional disturbance under consideration which we interpret to be "cholera infantum" is abrupt in onset, quickly becomes serious, and usually requires early supportive treatment to prevent a fatal termination before or during the treatment of the infection. The symptoms in general consist of a marked and rapid loss of weight, fever, diarrhea, dehydration and the appearance of intoxication. The intoxication is characterized by drowsiness or stupor and pallor with a

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4. Dean, L. W.: Personal communication to the authors.

grayish hue; it may appear simultaneously with the fever or follow it in a few hours. The temperature curve is inconstant. When fever existed previously, a secondary increase may occur. Diarrhea usually parallels and coincides with the dehydration and weight loss. Sometimes the onset of diarrhea is slightly delayed, and in a few otherwise typical cases diarrhea has been absent. Usually there are from eight to twenty mucus-containing, foul smelling stools daily. The dehydration is reflected in the weight loss and the loss of skin elasticity: it is sometimes of such a marked degree as to cause the appearance of extreme emaciation. Prior to the establishment of drainage from the site of infection, parenterally administered fluids are not retained, as is always evident by a subsequent loss in weight by an amount greater than the amount of fluid administered. The excretion of parenterally administered fluid is often reflected in an increase in the diarrhea.

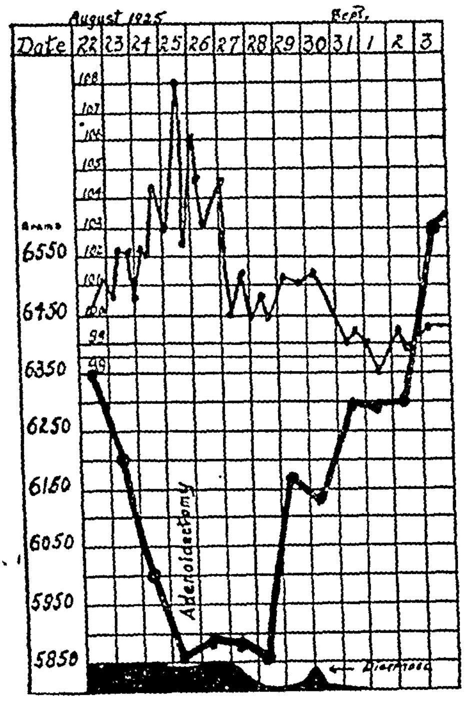

Chart 5 (case 5).—Case of "cholera infantum" in which recovery followed operative treatment of nasal sinusitis.

The blood leukocyte count has varied from 13,000 to 30,000 or more. Vomiting may occur throughout the course of the illness, with varying degrees of severity. Refusal of food is a fairly constant feature. Marked degrees of acidosis, as measured by the carbon dioxide combining power of the plasma, have been noted. The urine may at times contain casts and slight amounts of albumin; glucose has not been found.

The symptoms of the clinical condition under discussion, though in general the same, often show certain minor differences, depending on whether the condition is caused by mastoiditis or sinusitis. Independently of the otorhinologic examination, these differences often, but by no means always, permit a fairly accurate assumption as to which of these two sites is affected. When dependent on mastoiditis, the symptoms usually develop more abruptly and the patient rapidly becomes dehydrated and toxic; following mastoidectomy, the recovery is likely to be more rapid. When dependent on sinusitis, the period of illness usually is of longer duration; both the onset and the recovery are slower. The most serious symptoms are likely to be preceded by a few days of stationary weight and short periods of moderate diarrhea. The fever is often of a lower grade. Though the patient may not be actually failing during the prodromal period, suggestive shadows may be noted beneath the eyes. The most striking response to treatment is usually somewhat delayed. It seems probable that these differences depend entirely on the amount of drainage or lack of drainage. A sinus may be only partially blocked or partially drained, whereas a mastoid is likely to be completely free or occluded.

Parenthetically, we wish to call attention to certain cases which might be classed as chronic indigestion and in which the main features are stationary weight and an intermittent mild diarrhea with little or no fever. In such cases one quite frequently finds infected sinuses that are draining poorly. When proper drainage is obtained, diarrhea and other symptoms subside, whereas without drainage alterations of the feeding accomplish but little.

TREATMENT

The treatment of the constitutional disturbance here described should be directed primarily at the underlying infection. The discussion of this phase is left to the otorhinologists. When drainage has been established and the body fluids have been restored, the other features take care of themselves. In our cases no special feeding alterations have been made, nor do they seem indicated. During the acute stage of the illness, when the digestive capacity is low, usually but little food is taken; such as is taken does not seem to aggravate the diarrhea. During recovery, the ability to take care of food and the desire for food seem to increase simultaneously.

SUMMARY

There is a relationship between upper respiratory infection and a clinical picture corresponding to what has been described under the term cholera infantum. In recent years all patients presenting this clinical picture who have come under our observation have had either mastoiditis or paranasal sinusitis or both as the apparent underlying cause of their disturbance. The infection seldom is obvious, while the gastro-intestinal symptoms usually are prominent. The establishment of adequate drainage from the site of infection brings about prompt and complete recovery.

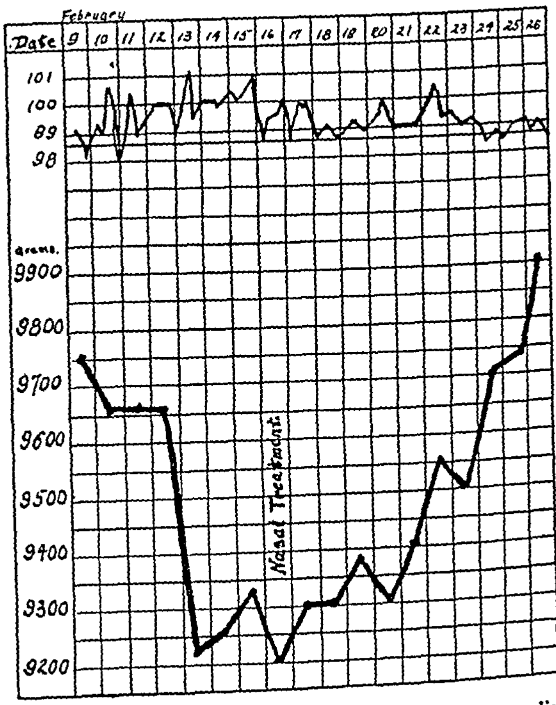

Chart 6 (case 6).—Dehydration and intoxication without diarrhea in which recovery followed nonoperative treatment of nasal sinusitis.

Children's Hospital.

ABSTRACT OF DISCUSSION

Dr. E. C. Mitchell, Memphis, Tenn.: Disorders of this type must vary somewhat, depending on the locality, climatic conditions and the environment in which one is located. In Memphis, from October 1 until May 1, more than 90 per cent of cases of alimentary intoxication are undoubtedly due to parenteral infection. In the summer, the majority of cases are due to chemical intoxication from food or from true enteral infections, both the specific type or the true dysentery, or the nonspecific form of colitis. However, even in the summer we may have parenteral infection. A child, aged 15 months, admitted to the hospital during the time we were seeing many cases of true bacillary dysentery, had a number of bloody stools daily. Examination of the stools was negative for dysentery bacilli. The child grew worse rapidly. The rhinologist found red, bulging ear drums, which were incised. Mastoid symptoms developed. The mastoid was drained, and the child began to improve and made an uneventful recovery. The authors state that in recent years all their cases have been due to either sinus or mastoid infection. It is still our experience that in order to classify our so-called alimentary intoxications we must consider food intoxications and infections both enteric and parenteral. I am glad that the authors state that they do not attribute all cases of alimentary intoxication to this type of parenteral infection, as I fear that the good points in the paper might have been overruled by this statement and an erroneous impression gained. I cannot consider drainage of the mastoid as a minor operation, and I fear that unless a careful analysis is made in each case, many mastoids would be drained uselessly. The salient point in this paper is the fact that this type of infection sometimes does produce cholera infantum, and that unless careful and routine examination is made this condition is overlooked.

Dr. John J. Shea, Memphis, Tenn.: In connection with Dr. Mitchell we have been following the sinus work in children for many years and have collected sufficient data to warrant us to continue in this work. The diagnosis is very difficult to make and really demands a little imagination. One cannot find clinically much evidence of sinus disease, nor does one find typical signs of mastoid disease. Unfortunately, roentgen-ray examination is made of a skull and not of the sinuses. The second point is to wash the antrum if it is a sinus infection, and the technic of washing the antrum which we follow is that of Dr. Thiels. The material must be obtained from the washing. These children do not have the acute empyema of the antrum that is seen in adults. They show mild changes. If clinicians will impress on the otorhinologists with whom they are working that there is something of importance in this, we shall not hear such statements as that made by an instructor in one of the large universities the other day—that all the instruments for sinus work in children should be junked.

Dr. John L. Morse, Boston: The point is not that when there is a diarrhea it is due to mastoid disease, because the chances are that it is not due to disease of the mastoids or sinuses. The important things to remember are that diseases of the mastoids and sinuses are more common than is usually realized, and that they may be accompanied by diarrhea. We ought to go away, not with the idea that every diarrhea is due to disease of the mastoids or sinuses, but that disease of the mastoids and sinuses is sometimes accompanied by a secondary diarrhea.

Dr. H. J. Gerstenberger, Cleveland: Dr. Mitchell and Dr. Morse expressed the views of many of us. The statement that these infants, when they are in this serious state, may take any kind of a food without any risk should not be allowed to pass without objection. If the infant is as sick as he is stated to be, then his diet should be restricted. He should not take a diet as high in calories as does the well infant, and he should be treated generally as a sick infant. To give to such an infant whole milk or two-thirds milk or even whole lactic acid milk with sugar, in my experience, would be a mistake.

Dr. Jules M. Brady, St. Louis: I should like to stress the fact that infection in any part of the baby's body may be accompanied by diarrhea. Frequently the mother will bring her baby with diarrhea, and say, "My baby has a cold in its bowels." I often think to myself that that mother had the proper conception of the condition. Whether a baby develops a diarrhea with infection will depend on several things: the previous condition of the baby; the constitution of that baby; the kind of infection, the virulence of the infection, and the kind of food the baby is used to eating.

Dr. H. F. Helmholz, Rochester, Minn.: Were any cultural studies made in this case?

Dr. F. P. Gengenbach, Denver: It seems to me that the author made a rather pointed remark when he said that practically all of his patients were artificially fed babies. If the initial cause of diarrhea is in the sinuses, why should there not be diarrhea more frequently in breast fed infants, too, despite their increased resistance to infection? They also have frequent head colds.

Dr. M. L. Floyd, Iowa City: We have observed a few patients whom one might term "half-way" cases, the outstanding features being stationary weight and intermittent diarrhea with no fever. By intermittent diarrhea we mean that on one day the patient will have from five to ten bowel movements, and on the following day a normal number. After drainage or treatment of the upper respiratory infection is accomplished, these patients would abruptly begin gaining in weight and the daily stool number becomes normal. There were no changes in the feeding. Cultures have given us no information. Results have not been uniform. From some surgical cases the growths have been sterile.

MERCURIALS

A PROPOSED METHOD OF LABORATORY EVALUATION AND CLASSIFICATION *

JOEL B. PETERSON, Ph.D.
CHICAGO

Our knowledge of comparative effects of various antiseptics or germicidal substances is still inconclusive. The method whereby their efficiency is compared to that of phenol (carbolic acid) has been valuable, in the case of phenol-like compounds, though even here the results are not in any manner as reliable as many seem to believe. When the phenol coefficient is applied to other antiseptic agents, the results are often far from indicating the real bacteria killing power of the product and frequently lead to confusion.

Among the preparations used today for antiseptic and germicidal effects, those containing mercury form an important class. These preparations range in composition from the well known and long used mercuric chloride to highly complex synthetic organic compounds such as mercurochrome-220 soluble.

The phenol coefficient is used by some to classify these and other antiseptics. As workers find it difficult to check one another for the phenol coefficient on phenol compounds, it is logical to suppose that more trouble would be experienced with nonphenolic compounds. The fact is that phenol coefficients for nonphenolic compounds are not reliable, and confusion has been the result. Obviously, therefore, a simpler method for the classification of mercurials, such as inhibiting action on a well known organism, one that would give more nearly concordant results, would be valuable.

In this paper are reported results of certain work that may have bearing on the laboratory evaluation of mercury compounds.

In the classic work of Pilcher and Sollmann,[1] the silver protein preparations were satisfactorily classified according to the silver ion concentration. The measurements were made by the Dreser[2] yeast method. Their

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* From the American Medical Association Chemical Laboratory.

[1] Pilcher, J. D., and Sollmann, Torald: J. Lab. & Clin. Med. 8:301 (Feb.) 1923.

[2] Dreser, H.: Ztschr. f. exper. Path. u. Therap. 19:283, 1917.

classification has received confirmation in the report of Smith and Giesy,[3] who used an entirely different method.

It was suggested by Dr. P. N. Leech that an adaptation of the Pilcher-Sollmann-Dreser method might be of value in classifying the mercury preparations. It was found practicable to do this. The method was also of interest in that it was capable of throwing some light on the activity of the molecules exclusive of the mercury.

Table 1.—*Substances Chosen for the Work*

Trade or Common Name	Chemical Name	Manufacturer or Distributor
Mercuric chloride*....	Mercuric chloride.....	J. T. Baker Chemical Company
Mercuric bromide*....	Mercuric bromide.....	Central Scientific Company
Mercury succinimide*.	Mercuric salt of succinic acid imide	Merck & Company
Mercuric potassium iodide*	Mercuric potassium iodide	Merck & Company
Metaphen............	2,4 bisacetoxy mercuri 3 nitro 0 cresol	*Dermatological Research Laboratories*
Sublamine............	Mercuric sulphate ethylenediamine	Schering & Glatz
Mercuric oxycyanide*	Mercuric oxycyanide..	New York Intravenous Laboratories
Meroxyl..............	0 (2,4 dihydroxy 3.5 dihydroxy mercuric benzoyl) sodium benzene sulphonate	Hynson, Westcott & Dunning
Mercuric cyanide*.....	Mercuric cyanide......	Mallinckrodt Chemical Works
Mercuric benzoate*...	Mercuric benzoate....	Powers Weightman Rosengarten Company
Mercurochrome-220 soluble	Disodium di brom hydroxy mercuri fluorescein	Hynson, Westcott & Dunning
Flumerin..............	Disodium hydroxy *mercurifluorescein*	Hynson, Westcott & Dunning
Mercurosal...........	Disodium hydroxy *mercurisalicyl oxyacetate*	Parke Davis & Co.
Mercury salicylate*...	Mercuric salicylate....	Mallinckrodt Chemical Works
Afridol................	Sodium hydroxy mercuri toluylate	Bayer Company, Inc.
	3 nitro o cresol sodium salt	*Dermatological Research Laboratories*
Fluorescein sodium salt*	Fluorescein sodium salt	Coleman & Bell Company
	Sodium salicyl acetate	Parke Davis & Co.
	0 (2,4 dihydroxy benzoyl) ammonium benzene sulphonate	Hynson, Westcott & Dunning
	Sodium dibrom fluorescein	Hynson, Westcott & Dunning
	Sodium tetra brom fluorescein	Eastman Kodak Company
Methyl violet*........	A mixture containing mainly pentamethyl rosaniline chloride	*National Aniline & Chemical Company, Inc.*
Gentian violet*.......	Mixture of hexamethyl and pentamethyl pararosaniline chlorides	National Aniline & Chemical Company, Inc.
Crystal violet*........	Hexamethyl pararosaniline chloride	National Aniline & Chemical Company, Inc.

* *Nonproprietary preparations.*

Briefly, the method consists in determining the smallest quantity of drug that will prevent the formation of gas in a yeast-sugar mixture of definite strength during a period of one hour. To correct the variations in yeast activity, adequate controls were employed, using mercuric chloride as the standard for comparison; similar physical conditions were maintained; like quantities of the yeast sugar mixture were used. These controls make the results comparable notwithstanding the fact that the commercial yeast used does not represent a pure yeast culture.

The actual test solutions were made by mixing 2 cc. of a 50 per cent sucrose solution with the desired amount of the drug and sufficient water to make the volume 8 cc. Finally, a 2 cc. portion of 20 per cent yeast suspension ("Fleischmann's Yeast" being used) was added; the whole was shaken and poured into a test tube 10 cm. long and 1 cm. in diameter. A test tube 15 cm. long and 2 cm. in diameter was slipped over the open end of the smaller tube and the whole quickly inverted. The linear distance from the end of the small tube to the surface of the liquid was carefully measured. After the tube had been kept at exactly 38 C. for one hour, this distance was remeasured. The tests of quantitative importance were those containing the smallest quantity of drug that yielded practically no carbon dioxide. The substances chosen for the work are given in Table 1.

In the course of the investigation it was deemed necessary also to determine approximately the p_H value of a duplicate of each solution, as any marked alkalinity should decrease the amount of carbon dioxide that would be given off. This was done by means of the hydrogen electrode, or, when that was impossible, by means of indicators. It was found as an interesting observation that the yeast acted as a buffer and that although some solutions without the yeast were markedly alkaline, a fairly constant p_H was obtained when the yeast was added. Indeed, the p_H of each freshly made solution containing yeast fell between 4 and 7.6. The results are reported in table 2.

Table 2.—*Results*

Substance Employed	Inhibitory Amount, Gm.	Equivalent to One Part In	Efficiency as Compared with Mercuric Chloride as 1	Weight of Mercury Inhibitory Dose, Gm.	Relative Efficiency to Mercuric Chloride for Equivalent of Mercury	p_H
		CLASS 1				
Mercuric bromide...	0.0004	25,000	1.25	0.000222	1.7	4-5.2
Mercuric chloride....	0.0005	20,000	1.00	0.000369	1.0	4-5.6
Mercury succinimide	0.00085	11,760	0.58	0.00042	0.88	4-5.2
Mercuric potassium iodide *............	0.0012	8,333	0.41	0.000306	1.2	4-5.6
Sublamine...........	0.0018	5,555	0.27	0.0007	0.52	5.2-6
Metaphen...........	0.0017	5,882	0.29	0.00101	0.36	4-5-6
		CLASS 2				
Mercuric oxycyanide	0.0076	1,315	0.065	0.0065	0.056	4-5.2
Meroxyl.............	0.012	833	0.041	0.0066	0.055	5.2
Mercuric cyanide....	0.0155	645	0.032	0.0123	0.03	4-5.2
3 nitro 6 cresol sodium salt; intermediate of Metaphen..............	0.016	625	0.031	......	.....	6 8
Mercuric benzoate...	0.0266	376	0.018	0.0070	0.053	4-5 6
		CLASS 3				
Mercurochrome....1	0.065	153	0.0071	0.0176	0.021	5.9
2	0.06	166	0.0083	0.0163	0.022	
3	0.06	166	0.0083	0.0163	0.022	
4†	0.01	1,000	0.05	0.0027	0.13	
Mercurosal..........	0.09	111	0.005	0.0106	0.0091	6-7.6
Flumerin...........1	0.1	100	0.005	0.0346	0.01	6.2
2	0.1	100	0.005			
Fluorescein sodium salt................	0.55	18	0.0009	......	.....	7.65
		CLASS 4				
Afridol..............	Inhibiting power very weak	.....	.....	....	.....	...
Mercuric salicylate..	Inhibiting power very weak	.....	.....	....	.....	...
Sodium salicyl acetate	Inhibiting power very weak	.....	.....	....	.....	...
0 (2,4 dihydroxy benzoyl) ammonium benzene sulphonate (intermediate of meroxyl)	Inhibiting power very weak	.....	.....	....	.....	...
Di brom fluorescein sodium salt.......	Results not definite					
Tetra brom fluorescein sodium salt..	Results not definite					5
Crystal violet.......	0.0024	4,166	0.208	....	.....	5.1
Gentian violet.......	0.0039	2,564	0.128	....	.....	5.5
Methyl violet........	0.0051	1,960	0.098	....	.....	

* Contains a small excess of potassium iodide.
† Precipitated with acid, filtered, washed, dried and dissolved in dilute sodium hydroxide.

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3. Smith, R. B., and Giesy, P. M.: J. Am. Pharm. A. 14: 10, 1925.

RESULTS

It will be noted from a survey of the results that the compounds naturally fall into three groups. (A fourth group containing closely related compounds is necessarily included.)

Class 1.—The first class contains compounds some of which are known to be relatively highly ionized mercury compounds. They all poisoned the hydrogen electrode quickly, all reacted with hydrosulphuric acid, and all were highly inhibiting toward the yeast-sugar fermentation. The quantitative data for the inhibitory doses are given in columns 1, 2 and 3. From the data given in columns 4 and 5 it would appear that the mercury action in some of these preparations is of the same order of magnitude as the activity of the mercury in the standard mercuric chloride solution. In the case of metaphen, however, the nonmercuric component of the molecule showed activity equivalent to those compounds of class 2; allowing for this, however, would not materially alter the position.

Class 2.—The second class contains mercury compounds that would be expected to be less ionized than some compounds in class 1. All of the mercury compounds in this class poisoned the hydrogen electrode, and all showed some change with hydrosulphuric acid, although mercuric sulphide was not actually thrown down.

The sodium salt of 3 nitro-*o*-cresol was mentioned in connection with metaphen. It shows a suprisingly strong inhibitory power and indicates that the powerful inhibitory effect of metaphen is due to at least two factors: the effect of the mercury and the effect of the rest of the molecule.

Class 3.—The third class contains compounds that do not have great inhibitory power. Of the mercury compounds examined, only two, flumerin and mercurochrome, failed to poison the hydrogen electrode, and only two, mercurosal and mercurochrome, failed to show a change with hydrogen sulphide. The mercury in these three compounds is then very closely bound. It should be noted that the intermediate compound for flumerin is found in this group. This points to the fact that the flumerin molecule minus the mercury has considerable inhibiting power, and that the mercury is very tightly bound. What has been said concerning the intermediate compound of flumerin might well be repeated for the intermediate of mercurochrome (the disodium salt of di brom fluorescein) and also of the sodium salt of tetrabrom fluorescein. One important phenomenon prevents placing the last two mentioned compounds in class 3: these substances exhibit almost a cyclic action. A certain small amount of either compound amounts to almost an inhibitory dose. Increasing the dose a given amount seems to decrease the effect, but increasing the dose still more increases the effect. In addition, a comparatively large amount of the drug is needed to make a small change in the gas evolved after enough has been added so that not more than 4 mm. of the gas is evolved in an hour. This is unlike the other substances tested in this respect. These phenomena probably bear a close relationship to those reported in the Report of the Connecticut Agricultural Experiment Station[4] and those of Kohman, Hoffman, Godfrey, Ashe and Blake,[5] which have to do with the subject of bromides as yeast nutrients.

It would appear that anything that would loosen the mercury from either flumerin or mercurochrome should increase its inhibiting power. Accordingly, mercurochrome dissolved in water, precipitated with diluted acetic acid, washed, well dried in a vacuum desiccator over sulphuric acid, and redissolved in just sufficient sodium hydroxide shows a considerably stronger inhibitory property (no. 4) than untreated mercurochrome. (It is my opinion that the mercury is so firmly bound to the organic nucleus that it is doubtful if it has any immediate influence when a fresh solution is applied *topically*. May not its effect [locally] be due to the dye component?)

Class 4.—Although no data are given for mercuric salicylate, the results concerning this compound are important. It is somewhat soluble, but in its maximum concentration there is not sufficient to show an inhibiting effect. This lends weight to the theory that the mercury in this compound is bound very firmly, probably being attached both to the carboxyl group and to the hydroxyl group.

Afridol, sodium salicyl acetate (the intermediate of mercurosal) and *o* (2.4 dihydroxy benzoyl) ammonium benzene sulphonate (the intermediate of meroxyl) do not show much inhibitory power even in their saturated solutions.

Crystal violet, gentian violet and methyl violet were introduced as strongly colored compounds not containing mercury. It should be pointed out that crystal violet, which is a hexamethyl derivative, has the greatest inhibitory power, while methyl violet, mainly a pentamethyl derivative, shows the lowest. Gentian violet, which is considered to be a mixture of the other two, falls between the two in inhibitory power.[6]

CONCLUSIONS

1. A laboratory classification of mercury compounds has been made by measuring their inhibiting effect on the yeast-sugar fermentation. All the values were compared with the inhibiting value of mercuric chloride.

2. The inhibiting effect of the yeast-sugar fermentation in most cases is due to the mercuric ion concentration, although in some cases other components of the solution are concerned.

3. Molecules identical to flumerin, mercurochrome and metaphen, except for their respective mercury carrying groups, show considerable inhibitory power.

4. The inhibiting value of crystal violet, methyl violet and gentian violet has been measured and compared with the inhibiting value of mercuric chloride.

It is recognized that the work of classification of substances, particularly antiseptics, according to their behavior, chemical, bacteriologic and clinical, is far from complete. It is hoped that further work may soon be fitted around that here reported.

I would appreciate the opportunity of reporting on the keeping properties of my solutions, employing the yeast method of determining the relative number of mercuric ions present, which in time will be an index of decomposition.

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[4] Report of the Connecticut Agricultural Experiment Station, Bull. 200, p. 113.

[5] Kohman, Hoffman, Godfrey, Ashe and Blake: J. Indust. & Engin. Chem. 7:781, 1916.

[6] This is suggested as a method of standardizing gentian violet and the other two methylated rosaniline derivatives.

Clinics for Indian Babies.—Minnesota's Child Hygiene Division has during the last two years held a series of infant and preschool clinics for children of the Minnesota Chippewa Indians, and two Chippewa Indian nurses have been employed to do maternal and infant hygiene nursing.—U. S. Children's Bureau.

PRESENT STATUS OF THE TOXEMIAS OF PREGNANCY *

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The types of toxemia to be considered in this discussion are hyperemesis, the preeclamptic toxemias and eclampsia.

Until recently, the etiology of the excessive vomiting of pregnancy has been a question of great dispute. At present all clinical evidence tends to substantiate the theory that hyperemesis is the result of a vicious cycle beginning with a carbohydrate deficiency, as suggested by Duncan, Harding and Titus, and that the pathologic changes found in the liver, kidneys and blood are the result of starvation and dehydration. That pernicious vomiting is a serious complication of pregnancy is evidenced by the fact that it has a mortality of more than 20 per cent.

These investigators (Watson, Harding and Titus) group the underlying factors under three headings:

1. The metabolic factor with its carbohydrate deficiency during pregnancy. This is shown in the glycogenic disturbance in the maternal liver, and, according to Harding, expresses itself in the urine by the presence of beta-oxybutyric acid and acetoacetic acid, which is the origin of the fatty degeneration found in the liver in fatal cases—for the liver is always affected in fatal cases of toxemia. It is, however, the dehydration and starvation brought about by the continuous vomiting that intensify the toxic symptoms.
2. The neurotic factor—this I would place first—in the woman with an unduly sensitive sympathetic nervous system, with heightened normal reflexes or hypersensitivity. This condition tends to accentuate the metabolic fault.
3. Intestinal intoxication, which is a recognized factor in all toxemias, however slight the actual toxic absorption; for it is through this emunctory that waste is eliminated.

The very fact that mild cases of nausea and vomiting of greater or less degree occur in more than 50 per cent of pregnant women and are held to be almost inevitable is evidence that there is a temporary disturbance of the physiologic balance in the majority of women who become pregnant, and, furthermore, that there is a relative carbohydrate deficiency due to the unexpected demand for glycogen on the part of the fetus and growing uterus, and an actual deficiency due to the nausea and vomiting and the consequent lessened intake.

With these facts demonstrated, it takes but little imagination to appreciate that by lack of care, marital indiscretions, improper hygiene and dietetics this vomiting may be aggravated to a degree that will take large quantities of fluid out of the tissues, resulting in dehydration.

The amount of fluid lost by vomiting will vary with the particular case. I have frequently measured the quantity of this vomitus and found that it ranges between 500 and 1,500 cc. daily. Such a fluid loss repeated day after day quickly dehydrates the woman and produces the clinical picture of dehydration with the dry skin, dry coated tongue and dry, cracked lips.

While these signs of dehydration are evident in severe cases, in the milder ones there may be a continuous fluid loss which is not great enough to show the outward signs, yet it is sufficient to diminish the eliminative output.

Continuous vomiting likewise produces rapid emaciation by starvation; lowers the blood pressure; gradually increases the rapidity of the pulse; diminishes urinary output; increases the concentration of the body fluids, and allows the development of general toxic symptoms, similar to those found in extreme starvation. These cases, furthermore, almost invariably show a low leukocyte count, which is further evidence of poor resistance.

Roger, Davis and Whipple have proved that starved animals are especially susceptible to liver injury, while by increasing the carbohydrate intake the liver resistance is increased.

The failing kidney function argues strongly for the free supply of fluid in this class of patient, for, as stated, the urinary output is always decreased and albuminuria in varying amount is always present. That the injury done to the kidney cannot be great and is entirely secondary is shown by the rapid disappearance of the albumin after recovery, when the uterus is emptied, or when diuresis is produced.

THE SIGNIFICANCE OF BLOOD CHEMISTRY

The percentage of nonprotein nitrogen and the uric content of the blood may be taken as an index of the renal injury. Normally the blood of women in the early stages of pregnancy does not contain more than 3 mg. of uric acid to the hundred cubic centimeters of blood, while the value of the nonprotein nitrogen rarely exceeds 30 mg. In excessive vomiting, the uric acid retention is always increased to some degree.

Accepting these facts as clinical evidence that dehydration and starvation resulting from the disturbance in the carbohydrate-fat ratio are the basic factors in this serious disease, it has been my plan to follow the suggestions of Harding and Titus and meet these conditions in the following manner:

In the mild cases, certain hygienic and dietetic principles must be impressed on the patient. First, there must be insistence on marital abstinence, for pelvic reflexes always increase the gastric irritability. Second, to combat the dehydration and consequent toxicity there must be a copious ingestion of water, usually in the form of some alkaline water. Third, to meet the carbohydrate deficiency we must insist on an increased intake of carbohydrates in the form of cereals, fruit juices with sugar, puddings, custards, chocolate or candy.

These general principles should be supplemented by rest in bed after meals, and the internal administration of small doses of thyroid extract. Should the vomiting persist and the patient lose weight, rest in bed with absolute isolation is to be insisted on; and the fluid loss made up by the hypodermoclysis, enteroclysis and the intravenous injection of glucose solutions, amounting to 1,000 cc. daily of 10 per cent solution, until diuresis is produced.

In 1924 and 1925, Thalhimer extended his treatment of postoperative nondiabetic acidosis to include cases of toxic vomiting of pregnancy. Briefly, the method consisted in the intravenous administration of about 1,000 cc. of warm 10 per cent glucose solution at the rate of from 200 to 300 cc. an hour. In addition, fifteen minutes after the injection has been begun, 10 insulin units is given hypodermically. More insulin is given at intervals of an hour, until 30 units to the thousand cubic centimeters of glucose solution has been given.

Although Thalhimer gave due credit to Titus, Hoffman and Givens, and to Duncan and Harding, who had

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

administered glucose alone in cases of this sort, his method of combining insulin with glucose seems to give better results than did glucose alone. If this treatment is successful; the pulse will become slower and fuller, the blood pressure will rise, the urinary output will be increased, and the vomiting will diminish or cease altogether.

When glucose alone or in combination with insulin fails to produce this improvement, I have employed transfusions of 300 cc. of human blood by the direct method, to which is added 500 cc. of physiologic sodium chloride solution. The success of these procedures has been so satisfactory that I have not had to empty the uterus for vomiting in a period of nearly five years.

It must, however, be impressed on the attendant that if, under this plan of treatment properly carried out for a period of a week, diuresis is not produced and the vomiting continues, the uterus should be emptied. As soon as vomiting ceases, the patient should be given solid food with a high carbohydrate content. Should no improvement take place after transfusion, the uterus should be emptied under morphine-scopolamine narcosis.

PREECLAMPTIC TOXEMIAS

The situation in preeclamptic toxemias is not the same as in pernicious vomiting, except that they both occur in pregnant women, and that in fatal cases the liver is always seriously involved.

In the study made by Herrick at the Sloan Hospital, where every toxemia of the latter months is studied by the internist as well as by the biochemist and the obstetrician, they have come to the conclusion that the woman who develops a preeclamptic toxemia or an eclampsia is the woman who starts on her pregnancy with defective emunctories or an unbalanced endocrine system. It is the result of a dysfunction and improper correlation of the eliminative system and endocrine control in the individual woman. My own study tends to confirm this theory, which has a définite clinical backing.

I feel certain that eclampsia is not due to any specialized toxin or toxins elaborated by the growing fetus or its appendages combined with the failure on the part of the mother to develop an antitoxin, but rather to the overload suddenly placed on the maternal organism; for the pregnant woman shows a condition of rapid growth and a rapid increase in weight superimposed on an adult organism that has ceased to grow. It is only natural, therefore, that metabolic strains are set up in the mother to meet the demands of the fetus. This results in a disturbance of the metabolic balance, which in turn affects hepatic and kidney function; for it is well known that eclamptic disturbances which characterize the latter half of pregnancy occur at a period of rapid fetal growth which needs an increased quantity of glucose to maintain it. This in a way confirms the low sugar content of the blood in pregnant women, as well as the increase in the uric acid content of the latter weeks.

Repeated studies of the blood chemistry in preeclamptic toxemias show nothing that is significant or characteristic, except that when the blood is found to have a decided nitrogen retention, either in the form of nonprotein nitrogen or in uric acid, it may be assumed that nephritis is the predominating factor in the particular toxemia.

I had expected to find that the basal metabolism rate would be materially changed in the pregnant woman, and be available as a diagnostic sign of some value in the preeclamptic toxemias; but studies of the readings at different periods of pregnancy has proved that the woman who is functionally fully equipped and healthy in the early months has practically no change in her metabolic readings, and that there is slight though definite elevation of the basal rate in the latter half, returning to the normal after a few days of the puerperium.

In the preeclamptic state the readings are slightly higher than normal; this, however, is demonstrated only in the severe conditions. There is little or no difference in the patients with and without a preexisting kidney lesion, so that antepartum differentiation cannot be made by this test. However, in the nephritic type the reading is apt to remain higher for some time after delivery; which in a way coincides with the blood pressure readings; therefore it may be concluded that neither blood chemistry nor metabolic rate throws much light on the etiology or prognosis. Furthermore, the clinical manifestations, those that may be observed by any keen practitioner, are of greater significance.

DIAGNOSIS

The preeclamptic toxemias are usually considered under:

1. The hepatic type, which is commonly of sudden development with a nephrosis, as the kidney lesion without any preexisting history of renal disease.

2. The renal type, in which nephritis is a contributing etiologic factor. The clinical distinction between these two types in antepartum toxemia is difficult to make, though in the former there is a previous history of renal disease, while in the latter there is always some clinical evidence of preexisting kidney lesion. However, after the labor is terminated, the hepatic type is shown by the relatively quick return of the blood pressure and kidney function to normal, while in the renal type it may take months to clear the urine of albumin and casts, and the blood pressure never ranges below 140.

The earliest evidences of toxemia are:

1. A rise in the systolic blood pressure.
2. The appearance of an albuminuria coincident with or appearing soon after the occurrence of hypertension.
3. Diminished urinary output—the quantity of urine eliminated falling below 1,000 cc.
4. An increase in the body weight beyond the normal 25 pounds (11 Kg.).
5. The appearance of edema in the face, hands and feet.
6. Constipation associated with "heartburn" and epigastric distress.
7. Frontal headache.
8. Eye symptoms, ranging from spots before the eyes to amaurosis.

Blood Pressure.—The pregnant woman whose kidneys are healthy at the time of conception carries a hypotension seldom rising above 120. Progressive readings above this point demand watching. Increasing hypertension during the course of pregnancy at any age points toward the onset of toxic symptoms. Rise in pressure usually precedes the appearance of albumin by days or weeks, unless there is a preexisting kidney lesion. Coincident with the occurrence of albumin there may be a diminution in the urinary output with or without increased concentration.

Weight.—The pregnant woman normally increases her weight by about 20 to 25 pounds (9 to 11 Kg.) in the course of pregnancy. The greater part of this increase takes place during the last four months. Rapid increase is always dangerous—less so when associated with edema, for edema seems to be a salutary and conservative process which takes the toxins out of the blood and deposits them in the tissues. Eclamptic explosions are less liable to occur when there is edema, especially when the edema forms slowly, than when it is of rapid appearance.

Headaches.—Frontal headache is one of the later manifestations of toxemia, sometimes the earliest forerunner of a convulsion. Headaches should always be inquired into. They are more common in the nephritic type. Gastric acidity with pain or burning in the epigastrium is another evidence of toxemia which gives warning of impending danger.

Eye.—Eye symptoms are common in the nephritic type, the fundal and retinal changes having the same appearance as are found in glomerular nephritis. They are usually absent in the fulminating type.

The treatment of the preeclamptic state and of eclampsia is essentially medical. The obstetric problem comes in for consideration only when labor is established by the convulsive siezures. Notwithstanding the fact that convulsions cease in 52 per cent of the cases when the uterus is empty, we are not justified by the results in any extensive series of clinical observations in making delivery the first consideration in view of the poor surgical risk. Naturally, the treatment of the latter month toxemias resolves itself into:

1. Prevention. One of the greatest strides in preventive medicine has been the antepartum care given to the pregnant woman. It has resulted, in many clinics, in the passing of eclampsia.
2. The control of the convulsion.
3. The management of labor in the presence of convulsions when labor has started.

The preeclamptic toxic patient should be in bed. She should have her nitrogenous intake limited to just enough to sustain life—milk and fruit juices with sugar make up the foundation of her diet. Stimulation of her emunctories should be done by producing diuresis. This may be done with water and the intravenous use of glucose solutions, except in the cases of edema, when the exhibition of fluids should be restricted and diuresis stimulated by lumbar cupping, ammonium chloride and calcium chloride. The skin must always be kept active. This effect may be secured by having the woman rest between blankets or with the electric baker. To favor surface relaxation, the nitrites will add to its efficiency. When no improvement is shown, pregnancy must be terminated by obstetric procedure. The method should be determined by the existing obstetric condition, always keeping in mind that the toxic patient is a poor surgical risk, bearing anesthesia poorly, liable to shock, and more susceptible to infection than her better equipped sister. Haste and trauma must be avoided.

In the presence of convulsions, the indications are never surgical. With the appearance of the first convulsion, the woman should be given (hypodermically) one-fourth grain (16 mg.) of morphine sulphate; placed in bed in the Trendelenburg posture, and turned on the side to allow the mucus to drool from the mouth. The tongue must be protected by a "gag"; the bladder is emptied by catheterization. If the pressure is 150 or more, 1,000 cc. of blood should be withdrawn. This may be replaced by 500 cc. of a 10 per cent glucose solution. The morphine is repeated in an hour, and nothing else is done.

Unless the convulsions recur and the supervening coma increases to a degree that the patient remains comatose between convulsions, this condition is an indication for the intravenous use of magnesium sulphate in quantities of 100 cc. of a 25 per cent solution, which has had a most kindly effect, diminishing the cerebral edema and controlling the occurrence of subsequent convulsions.

The management of labor in the presence of eclamptic convulsions is based on the three principles of: (1) avoiding trauma; (2) preventing infection, and (3) diminishing the shock—for the eclamptic patient is a very poor surgical risk.

My plan has been to disregard the labor until complete dilatation of the cervix is obtained when, if the head is engaged and at the spines, delivery may be expedited by the use of low forceps under light oxygen-ether narcosis added to the morphine analgesia.

Section has been limited to those cases in which there was a definite obstetric indication and not employed as a routine for rapid delivery. My experience shows that prevention is the keynote of success; the toxic patient needs active treatment with the first appearance of hypertension; convulsions may be prevented by induction of labor when medical means fail to reduce tension and produce diuresis, and the treatment of eclampsia is essentially medical, and surgical delivery has only a limited field.

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ECLAMPSIA AT THE CHICAGO LYING-IN HOSPITAL

IMMEDIATE AND LATE RESULTS *

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In this report are analyzed the cases of eclampsia treated at the Chicago Lying-In Hospital from July 1, 1917 (when the new hospital was opened), to Jan. 1, 1926. During these eight and one-half years there were 29,587 obstetric patients. Of this number, 20,226 were delivered in the hospital and 9,361 were delivered at home by our dispensary service. Among these 29,587 patients there were eighty-three who had eclampsia, an incidence of 0.28 per cent. Five of these women who were delivered at home were colored and were sent to other institutions. The remaining seventy-eight patients with eclampsia were admitted to the Chicago Lying-In Hospital, and a study of these cases forms the basis of this paper.

OBSERVATIONS

Definition.—I consider as eclampsia all cases, showing the typical signs and symptoms of acute toxemia including convulsions, in which medical causes like epilepsy and other diseases can be ruled out, and also those cases of acute toxemia without convulsions which at necropsy show the changes characteristic of eclampsia.

Analysis.—Among the seventy-eight patients with eclampsia there were six maternal deaths, giving a mortality of 7.7 per cent. One patient was moribund on admission and died ten and one-half hours later without having received any specific treatment. The baby was dead; hence no attempt was made to deliver it. If we deduct this case, which resembled more acute yellow atrophy of the liver, the mortality is 6.5 per cent. Details of the deaths will be given later.

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

Parity and Age.—Of the seventy-eight patients, fifty-seven, or 73.1 per cent, were primiparas, fifteen were secundiparas, two were tertiparas, two were quadriparas, one was a quintipara, and one a sextipara. Twenty-four patients (31 per cent) were over 30 years of age, and four of the maternal deaths occurred among these twenty-four women, 16.7 per cent (table 1).

Table 1.—*Age and Relation to Mortality*

Age	Number	Deaths: Number	Deaths: Per Cent
15 to 20 years	8	...	3.8
21 to 25 years	20	2	
26 to 30 years	25	...	
31 to 35 years	15	2	16.7
36 to 40 years	7	1	
41 to 45 years	2	1	
Unknown	1		

Duration of Pregnancy.—One patient was overterm, twenty-three were at term, and fifteen had reached the thirty-eighth week. The duration of pregnancy in the others is shown in table 2. In one half of the cases, the pregnancy had lasted thirty-six weeks or less.

Table 2.—*Duration of Pregnancy*

Weeks	42	40	38	36	34	32	30	28	26	24	Unknown*
Number	1	23	15	9	4	6	2	5	5	2	6

* All most likely less than thirty-six weeks.

Blood Pressure.—The blood pressure on admission and discharge is listed in table 3.

Table 3.—*Blood Pressure*

	Admission: Systolic	Admission: Diastolic	Discharge: Systolic	Discharge: Diastolic
200 mm. or over	18	0	4	0
190 to 200 mm.	10	0	0	0
180 to 190 mm.	13	0	2	0
170 to 180 mm.	16	0	0	0
160 to 170 mm.	9	0	4	0
150 to 160 mm.	4	2	3	0
140 to 150 mm.	2	4	9	0
130 to 140 mm.	1	3	18	1
120 to 130 mm.	1	9	19	5
110 to 120 mm.	0	17	9	1
100 to 110 mm.	0	17	0	8
90 to 100 mm.	1	14	0	14
80 to 90 mm.	0	5	0	20
70 to 80 mm.	1	3	0	17
60 to 70 mm.	0	1	0	1
50 to 60 mm.	0	0	0	1
40 to 50 mm.	0	1	0	0
Not recorded	2	2	10	10

The average stay in the hospital of all the patients was sixteen days.

Table 4.—*Urine*

	Admission	Discharge
4+ albumin	31	2
3+ albumin	25	3
2+ albumin	12	7
1+ albumin	7	17
Trace albumin	1	24
No albumin	1	18
Unrecorded	1	7
4+ casts	4	0
3+ casts	5	1
2+ casts	24	0
1+ casts	24	13
No casts	11	54
Unrecorded	10	10

The low systolic pressures of 90 and 70 mm. and the corresponding diastolic pressures of 60 and 40 mm. were those of two patients admitted in coma after having had convulsions at home. Among the four patients who are recorded as having had a systolic pressure of 200 mm. or over at discharge, three died in the hospital.

Urine.—Table 4 indicates the urinary findings of the patients at the time of admission and discharge.

The two patients who are listed as having had 4 + albumin at the time of discharge died in the hospital. The large number of cases listed as unrecorded were in the hospital during the war when there were few assistants. Among these patients were three who died within twenty-four hours. In six cases, pus in the urine was recorded.

Convulsions.—Twenty-three patients (29.5 per cent) had only one convulsion (but three of the deaths occurred among these patients). The number of convulsions of the patients is shown in table 5.

Table 5.—*Number of Convulsions*

Number of Convulsions	Number of Patients	Deaths: Number	Deaths: Per Cent
1	23	3	13.0
2	22	..	....
3	10	..	....
4	4	..	....
5	3	..	....
6 to 10	7	1	14.3
11 to 15	3	1	83.3
16 to 20	3	..	....
21 to 25	2	1	50.0
28	1	..	....
Total	78	6	7.7

The convulsions began ante partum in thirty-nine cases (50 per cent), intra partum in sixteen cases (20.5 per cent) and post partum in twenty-three cases (29.5 per cent). The distribution of maternal and fetal deaths in relation to the onset of convulsions is shown in table 6.

Table 6.—*Onset of Convulsions*

Onset of Convulsions	Number	Maternal Deaths: Number	Maternal Deaths: Per Cent	Fetal Deaths: Number	Fetal Deaths: Per Cent
Ante partum	39	4	10.3	16	41.0
Intra partum	16	0	0.0	3	18.8
Post partum	23	2	8.7	4	17.4

Manner of Delivery.—The manner of delivery of these seventy-eight patients is shown in table 7.

Table 7.—*Delivery*

Delivery	Number	Per Cent	Maternal Deaths: Number	Maternal Deaths: Per Cent	Fetal Deaths: Number	Fetal Deaths: Per Cent
Spontaneous in hospital	14	25.0	..	....	3	30.0
Spontaneous [illegible]	6*		..	3.4	2 (9)	
Spontaneous [illegible]	9	11.3	1	(11.1)	4	
Low forceps	10	26.2	1	9.5	2	9.5
Mid forceps	9		..			
High forceps	2		1			
Version and extraction	7	8.7	1	14.3	2	28.6
Abdominal cesarean section	15†	18.7	1	6.7	3	17.6
Vaginal cesarean section	4	5.0	0	0.0	4	100.0
Breech extraction	1	1.3	0	0.0	0	0.0
Craniotomy	2	2.5	0	0.0	2	100.0
Undelivered	1	1.3	1	100.0	1	100.0

* Seven babies.
† Seventeen babies.

Table 7 shows that 62.5 per cent of all deliveries were operative. However, while 36.3 per cent of all the labors terminated spontaneously, labor had been induced in 11.3 per cent of them. Hence, only 25 per cent of the patients had both a spontaneous onset and termination of labor. All the abdominal cesarean sections were performed on primiparas, and only one of these patients was in labor. Nine of the operations were of the low, cervical type and five of them were performed under local (infiltration) anesthesia. The death in the cesarean section series occurred after a classic operation done under ether.

Convulsions ceased after delivery in 78.2 per cent of all the cases in which they began ante or intra partum. Among the fifteen abdominal cesarean section cases, convulsions began before operation in twelve; and in all of these cases, convulsions ceased after operation. In the three remaining cesarean section cases, the convulsions began after delivery. Twelve of the cesarean section patients had more than one convulsion. Among the twenty patients who delivered spontaneously without induction of labor, convulsions began before labor in three, during labor in two, and after labor in fifteen. In all the patients who delivered spontaneously at home, convulsions began post partum. Among the nine patients who delivered spontaneously after induction of labor, convulsions began before labor in four, during labor in one, and after labor in four.

Labor was induced twenty times (25.6 per cent), as follows: colpeurynter, eighteen; gauze, one; bougie, one. The cervix was incised five times, and manual dilation of the cervix was performed three times.

The maternal mortality for the various forms of delivery was as follows: spontaneous, 3.4 per cent; abdominal cesarean section, 6.7 per cent; forceps, 9.5 per cent, and version and extraction, 14.3 per cent. No deaths occurred after the other forms of delivery. The fetal mortality was as follows: forceps, 9.5 per cent; abdominal cesarean section, 17.6 per cent; version and extraction, 28.6 per cent; spontaneous, 30 per cent, and vaginal cesarean section, 100 per cent.

Adjuvant treatment consisted essentially of venesection, which was performed in 41 per cent of the cases, and the use of narcotics. In occasional cases the following were used: magnesium sulphate intramuscularly and intravenously, glucose intravenously and by rectum, sodium bicarbonate intravenously and by rectum, insulin, sodium bromide, phenobarbital, a preparation of veratrum viride, and thyroid preparations.

Blood Loss.—It is a common belief that the blood of eclamptic patients clots easily, and not infrequently interferes with the therapeutic withdrawal of blood. However, a study of our cases in which the blood loss was reported (fifty-six cases) shows that 30.4 per cent of the patients lost more than 500 cc. at the time of delivery. In a number of cases the operative procedure was undoubtedly responsible for the large amount of blood lost.

Blood Chemistry.—Studies of the blood chemistry in sixteen patients yielded no uniform results. Definite increases in the uric acid, nonprotein nitrogen and creatinine contents were found six times and high urea nitrogen values were obtained five times.

Complications.—Among the complications that occurred were abruptio placentae, two; insanity, one, and cerebral hemorrhage, one.

Prenatal Care.—The value of proper prenatal care in the prevention of eclampsia is recognized by all; but, contrary to the opinion of some authorities, not all cases of eclampsia are preventable. A study of our series revealed that forty-six patients (59 per cent) had absolutely no prenatal care, eighteen patients (23 per cent) had very poor observation during pregnancy, but fourteen patients (18 per cent) had good prenatal care. In the last group are included patients who were seen regularly throughout pregnancy and very frequently when the early symptoms of toxemia appeared, and also patients who were sent to the hospital and who in spite of conservative therapy developed eclampsia. Although the care given these patients was good, it was evidently not good enough.

It is interesting to note that in three instances some other member of the family had had eclampsia. In two cases it was a sister and in the third instance it was the patient's mother. The husband of one of the patients who died of eclampsia married the sister of the latter, and the sister also had eclampsia but she survived.

Maternal Deaths.—Brief histories of the six maternal deaths are as follows:

Case 1.—Mrs. K. B., a primipara, aged 42, was admitted to the hospital, May 21, 1918. Her blood pressure was 185 mm. systolic and 120 mm. diastolic, and the urine contained 1 + albumin. Her physician performed a classic cesarean section, following which she had eight convulsions. Death occurred the next day. The baby was born alive and thrived. This patient had had no prenatal care.

Case 2.—Mrs. G. O., a primipara, aged 33, was admitted in labor, March 2, 1921, after having had six convulsions at home. On admission, the blood pressure was 165 mm. systolic and 90 mm. diastolic. The urine contained 4 + albumin and 4 + hyaline and granular casts, and the pulse rate was 168 a minute. Venesection was performed soon after entrance, and labor was terminated by a low forceps operation. The child was born alive. The patient had three convulsions during and three convulsions after labor, and died two days later. This patient also had had no prenatal care.

Case 3.—Mrs. R. T., a secundipara, aged 35, was admitted, July 17, 1924, after having had a convulsion at home. She was thirty weeks pregnant, and complained of headache, dizziness, pain in the epigastrium, and spots before the eyes. The blood pressure was 190 mm. systolic and 90 mm. diastolic. The urine contained 4 + albumin and 4 + casts, and there was pronounced edema. Conservative therapy, including venesection, was employed for four days, but the patient had more convulsions and grew worse. Labor was induced by means of a colpeurynter, and a nonviable fetus was delivered by version and extraction. The patient died sixteen hours later. This patient had had no prenatal care.

Case 4.—Mrs. C. S., a secundipara, aged 25, was admitted, Jan. 13, 1925, with a blood pressure of 192 mm. systolic and 140 mm. diastolic. The urine contained 4 + albumin and 2 + casts. The patient complained of headache, spots before the eyes, and vomiting, and she gave a history of chronic nephritis. Edema was pronounced. The blood pressure soon rose to 250 mm. systolic and 110 mm. diastolic. Pregnancy had advanced to the thirty-sixth week, and labor was induced by means of gauze. Delivery followed spontaneously nine hours later, and after this the patient had twenty-five convulsions during a period of three days. On the third day there were symptoms of cerebral hemorrhage, and death occurred on the seventh day. This patient had had good prenatal observation.

Case 5.—Mrs. A. H., a primipara, aged 39, was brought to the hospital, Aug. 1, 1925, in coma after having had a convulsion at home. The blood pressure was 218 mm. systolic and 128 mm. diastolic, and a catheterized specimen of urine contained 4 + albumin and 2 + casts, some pus and blood. The patient was at term and had taken castor oil and quinine to start labor and with success. Delivery was accomplished by a high forceps operation after manual dilation and incision of the cervix. Four hours after delivery the patient died, never having regained consciousness from the time of admission. The baby left the hospital alive. This patient had had very poor prenatal care.

Case 6.—Mrs. A. R., a primipara, aged 25, admitted, Jan 18, 1922, was seven months pregnant and had had very little prenatal observation. She had had one convulsion at home, and on admission was comatose and cyanotic. The blood pressure was 90 mm. systolic and 60 mm. diastolic, the pulse was 152 a minute, and the urine contained a small amount of albumin. The baby was dead. The patient was moribund, and died ten and one-half hours after admission without being delivered. Clinically, the case seemed to be one of acute yellow atrophy of the liver. Necropsy showed acute toxic degeneration of the liver with fatty degeneration, and acute toxic nephritis with fatty degeneration of the kidneys.

Summary of Deaths.—Four of the women were primiparas, and three were in the hospital one day or less. Three women had only one convulsion, one had eight, one had twelve and one had twenty-five. In four of the cases the convulsions began before labor, and in two, after labor. The method of delivery was as follows: spontaneous after induction of labor, version and extraction after induction, high forceps after forcible dilation of the cervix, low forceps and classic cesarean section. One patient whose baby was dead on admission died undelivered. Three of the patients had no prenatal care, two had very poor observation, and one had been closely watched during pregnancy. One case seemed to be acute yellow atrophy of the liver.

Babies.—Since there were five pairs of twins in the series, the seventy-eight mothers had eighty-three babies. The incidence of twins in this group was 6.4 per cent, which is seven times as high as the incidence of twins at the hospital during the period covered by this report (0.9 per cent). Of the eighty-three babies, only fifty-two (62.7 per cent) weighed 2,000 Gm. (4 pounds 7 ounces) or more, as shown in table 8.

Table 8.—*Babies*

Weight	Number	Per Cent	Deaths Number	Deaths Per Cent
3,000 Gm. (6 lb. 10 oz.) or over....	22	26.5	1	4.5
2,500 Gm. (5 lb. 8 oz.) to 3,000....	19	23.0	0	0.0
2,000 Gm. (4 lb. 7 oz.) to 2,500....	11	13.2	0	0.0
1,600 Gm. (3 lb. 8 oz.) to 2,000....	13	15.6	7	53.8
Less than 1,600 Gm. (3 lb. 8 oz.)..	15	18.1	12	80.0
Unknown	3	3.6	3	100.0
Total..........................	83	100.0	23	27.7

The entire number of fetal deaths, including macerated fetuses, stillborn fetuses and neonatal deaths, was twenty-three, giving a mortality of 27.7 per cent. Hence, 72.3 per cent of all the babies left the hospital alive. Seven babies were dead in utero when the mothers were admitted, and one baby died at home before the mother was admitted. If we deduct these eight babies, the fetal mortality of the remaining seventy-five babies was 20 per cent. Of the fifteen babies that constitute this 20 per cent, only one weighed over 2,000 Gm. (4 pounds 7 ounces). Of the three fetal deaths listed as of unknown weight, two were macerated and one died at home. Five babies had convulsions. In a few instances, necropsy showed hemorrhagic necroses in various organs similar to those found in eclamptic women.

Seventeen babies were born by means of fifteen cesarean sections, and among the babies were three deaths (17.6 per cent). One of these babies was dead on admission, being associated with a complete detachment of the placenta and the other two babies were not viable. If we omit the first baby, the fetal mortality was 12.5 per cent.

Follow-up Study.—Of the seventy-two patients who left the hospital alive, I was able to trace sixty, or 83.3 per cent (table 9). Two of the women (3.3 per cent) died of chronic nephritis, two and three and one-half years, respectively, after leaving the hospital. The former became pregnant a year after having had eclampsia, but, because of the chronic nephritis, a hysterotomy and sterilization operation were performed. The latter patient had an ectopic pregnancy one and one-half years after having had eclampsia. Of the remaining fifty-eight women, three now have chronic nephritis. Two of these three women and the two women who died after leaving the hospital had chronic nephritis before they had eclampsia. Hence four of the five women who had chronic nephritis after they had eclampsia were known to have had the chronic nephritis before the beginning of the pregnancy that led to the eclampsia.

Table 9.—*Follow-Up*

	No.	%	Number	Per Cent
Died (of chronic nephritis)..........			2	3.3
Chronic nephritis now..........			3	5.0
Well now			55	91.7
Pregnancies			18	20.0
Normal termination	10	55.6		
Now pregnant	1	5.6		
Eclampsia	1	5.6		
Preeclampsia	3	16.6		
Chronic nephritis	2	11.1		
Ectopic pregnancy (with chr. neph.)....	1	5.6		

The remaining fifty-five women (91.7 per cent) have no untoward sequelae from the eclampsia. All have normal blood pressures and normal urinary findings at present.

Among the sixty patients followed, seventeen women had eighteen pregnancies subsequent to the attack of eclampsia. Nine of these women had ten entirely normal pregnancies, labors and puerperia. One patient is now six months pregnant and has no signs of toxemia. One patient had eclampsia a second time, and three had preeclamptic symptoms for which the pregnancies were terminated. Hence, four out of the fifty-five women (7.3 per cent) who completely recovered after eclampsia had a recurrence of toxemic symptoms. These four instances of recurrence were in a total of eighteen pregnancies (22.2 per cent). However, since in three of these eighteen pregnancies the patients had nephritis of long standing, we should calculate the recurrence of toxemia on the basis of the pregnancies of the patients who completely recovered; namely, fifteen. This yields an incidence of 26.7 per cent, which is indeed very high.

The patient who had a second attack of eclampsia, and the three women who had preeclamptic symptoms, recovered completely after their pregnancies were ended. Two patients had their pregnancies terminated and were sterilized early because of chronic nephritis. One of these two women subsequently died. One patient had an ectopic pregnancy, and she also died later of chronic nephritis. (These are the two deaths mentioned above.) Two patients had attacks of pyelitis after eclampsia, which makes one think of the connection between focal infection and eclampsia.

I did not follow up the babies because Dr. Abt[1] last year studied our cases of toxemia with a view of determining the relationship of neonatal morbidity and mortality to the toxemia. He found that eclampsia did not seem to effect permanent injury in the infants who survived.

COMMENT

The foregoing analysis indicates that treatment in most of the cases was directed toward emptying the uterus. The method chosen depended on the condition of the patient, the size of the baby and the state of the cervix. The results obtained (a maternal mortality of 7.7 per cent or 6.5 per cent) are better than the results published by most authors. In spite of the fact that many babies were nonviable, the total fetal mortality was but 27.7 per cent, and only 20 per cent if we deduct the fetuses that were dead on admission to the hospital. Since a large proportion of the 72.3 per cent who left the hospital alive were premature and many were toxemic, we have here an indication of the value of proper hospital care for premature babies.

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[1] Abt, I. A.: Relationship of Neonatal Morbidity and Mortality to the Toxemias of Pregnancy, Arch. Pediat. **42**: 415 (July) 1925.

A word of caution may not be amiss concerning phlebotomy. As indicated in the analysis, almost one-third of the patients lost more than 500 cc. of blood at the time of delivery, showing that patients with eclampsia can bleed excessively. Hence, one should not draw off much blood therapeutically *before* labor, especially if the patient is small and undernourished.

The matter of prenatal care is worthy of discussion. The present analysis shows that 59 per cent of the patients had absolutely no observation before the attack of eclampsia, but that 18 per cent had good prenatal care. While the latter figure is unusually high, it nevertheless indicates that a certain number of patients will develop eclampsia even under the best of care, unless the pregnancy is terminated when symptoms of toxemia increase. These patients can often be recognized during pregnancy because they frequently are of the "pituitary type", with a tendency to hard obesity, masculine pelvis, masculine distribution of hair, and thick skin. Patients with toxemia ill enough to require treatment during pregnancy in a hospital should not be permitted to leave the hospital until they are delivered.

The follow-up study indicates that the large majority (91.7 per cent) of women who did not succumb to eclampsia recovered completely, and of the five women (8.3 per cent) who had chronic nephritis after the eclampsia four were known to have had chronic nephritis before the eclampsia. The fifth may also have had nephritis before eclampsia, but I could not determine this. It appears, therefore, that chronic nephritis is rarely found after eclampsia unless the patient previously had nephritis.

An appreciable number of the normal patients who subsequently became pregnant had a recurrence of the symptoms of toxemia. In the present series the incidence was 26.7 per cent. In other words, the patients who recovered completely after having had eclampsia remained normal as long as they did not become pregnant. When these patients subsequently became pregnant, more than one fourth developed signs and symptoms of toxemia. This probably means that, in a certain proportion of cases, eclampsia does cause a permanent derangement of the kidneys and perhaps other organs; but this derangement is not detectable by our usual methods of examination. Perhaps some new chemical studies of the blood and urine will reveal those patients who are likely to develop toxemia during pregnancy.

SUMMARY

Among the seventy-eight cases of eclampsia analyzed there were six maternal deaths (7.7 per cent). If we deduct one moribund, untreated patient, the mortality is 6.5 per cent. In 50 per cent, the convulsions began before labor; in 20.5 per cent, during labor, and in 29.5 per cent, after delivery. The maternal mortality for these groups was 10.3, 0 and 8.7 per cent, respectively, and the fetal mortality was 41, 18.8 and 17.4 per cent, respectively.

The incidence of operative deliveries was 62.5 per cent. However, while 36.3 per cent of all the labors terminated spontaneously, labor had been induced in 11.3 per cent of them. Hence, only 25 per cent of the patients had both a spontaneous onset and spontaneous termination of labor.

Convulsions ceased after delivery in 78.2 per cent of all the cases in which they began ante or intra partum. Among the fifteen abdominal cesarean sections, convulsions began before operation in twelve, and in all of these cases the convulsions ceased after operation.

The maternal mortality for the various forms of delivery was: spontaneous, 3.4 per cent; cesarean section, 6.7 per cent; forceps, 9.5 per cent, and version and extraction, 14.3 per cent. The fetal mortality for these groups was: forceps, 9.5 per cent; abdominal cesarean section, 17.6 per cent; version and extraction, 28.6 per cent; spontaneous, 30 per cent, and vaginal cesarean section, 100 per cent.

Of the seventy-eight patients, 59 per cent had no prenatal care, 23 per cent had very poor observation during pregnancy, and 18 per cent had good prenatal care.

There were five pairs of twins (6.4 per cent). Among the eighty-three babies there were twenty-three deaths (27.7 per cent). However, the fetal mortality of the seventy-five babies that were alive when their mothers entered the hospital was only 20 per cent. Of the fifteen dead babies that constitute this 20 per cent, only one weighed more than 2,000 Gm. (4 pounds 7 ounces). Only 62.7 per cent of all the babies weighed 2,000 Gm. or more.

Of the seventy-two patients who left the hospital alive, sixty (83.3 per cent) were traced. Of this number, two died of chronic nephritis, three now have chronic nephritis, and fifty-five (91.7 per cent) are well. Among eighteen subsequent pregnancies, ten ended normally and one is in progress now. One patient had another attack of eclampsia, and three had preeclamptic symptoms for which the pregnancies were ended. Hence, among the patients who completely recovered after the attack of eclampsia, 26.7 per cent of those who subsequently became pregnant developed signs and symptoms of toxemia. These patients again recovered completely.

CONCLUSIONS

As a result of this study we feel that the treatment of antepartum and intrapartum eclampsia should not be entirely conservative nor entirely radical. However, in experienced hands we favor emptying the uterus in most cases, and the method selected depends on the condition of the patient, the size of the baby and the state of the cervix. Where the patient is a primipara with a viable baby and the cervix is undilated, we prefer to terminate pregnancy by a low or cervical cesarean section *under local anesthesia* as soon after the first convulsion as possible. We believe that all patients with eclampsia should be sent to a hospital. When a patient must remain at home the treatment should be conservative. It should also be conservative in a hospital when the attending physician is not skilled in operative obstetrics.

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Renal Glycosuria and Life Insurance.—Renal glycosuria requires no treatment; it never does any harm beyond the loss of carbohydrate that results from its presence. General metabolism is usually unaffected, and as far as any harm to health is concerned, the sufferer from this condition may be looked on as a normal individual. Frequently the question of life insurance arises in connection with this glycosuria. The general view of the matter now taken by the more progressive companies is that, provided the patient is otherwise healthy, renal glycosuria need not be considered as a disadvantage.—MacLean, Hugh: *Lancet* **1**:1242 (June 26) 1926.

TOXEMIA OF PREGNANCY

EIGHT HUNDRED AND SEVENTY-NINE CASES WITH CONVULSIONS AT THE NEW YORK LYING-IN HOSPITAL *

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It has been our privilege during the last thirty years at the New York Lying-In Hospital to study and in part to treat 879 cases of toxemia of pregnancy of the convulsive type, commonly known as eclampsia. These cases have consecutively occurred in a series of 152,248 confinements in the combined indoor and outdoor services. Included, there are 414 cases with convulsions beginning before labor; seventy-four cases in which the time of onset was not definitely noted but the majority of which evidently began ante partum; 118 cases in which convulsions began during labor; 234 cases in which convulsions began during the puerperium; twenty-three cases in which the patients died undelivered shortly after being admitted in a moribund condition, and sixteen in which the patients were discharged undelivered, pregnancy continuing.

During this time our conception of the control and treatment of the disease has varied greatly. The pendulum of procedure has swung back and forth, and while we may be still far from a scientific treatment based on an accurate etiology, we at least have come to believe that the eclamptic patient is as much a medical as an obstetric problem, and with the accompanying corollary, that obstetric intervention should be for obstetric indications only, and not for the convulsions.

We feel that we must remain content for the present with this principle of treatment, even though we also find statistically that the sooner the woman comes to delivery after the first convulsion the better are her chances for recovery. In a previous study of this point it was noted that out of seventy cases observed, thirty deaths occurred where delivery averaged 11.2 hours after the first convulsion; while forty recoveries took place with an average delivery 7.3 hours after the first convulsion. In 106 cases, there was no further convulsion in sixty-nine after delivery. Could we but promptly relieve the woman of her pregnancy without the slightest addition of shock or trauma, it would be ideal; but no matter how dexterous we may be, this is impossible.

Along such lines, vaginal and abdominal cesarean section have been proposed and highly advocated by certain authorities. Our results in delivery of eclamptic patients by abdominal cesarean section have not been encouraging. In fifty-four patients so delivered, twelve mothers died, a mortality of 22 per cent; while in a series of forty-two delivered by vaginal cesarean section, eight died, a mortality of 19 per cent, practically the same as by all other methods. Where we seem to have gained in controlling the eclampsia by prompt cesarean delivery we have equally lost by introducing the additional operative mortality.

Some fifteen or twenty years ago, according to the reports of a certain group of men in and about Cincinnati, all that it was necessary to do for eclampsia was to give full doses of veratrum viride. This treatment was entirely disappointing in our experiences with it. We have seen at times a large number of eclamptic patients subject to certain routine treatment followed by very low mortality. So satisfactory would this appear that some of us would be tempted to believe that we had reached a point at which a method of treatment that was successful had been discovered; and then, with the same care and treatment, the death rate would begin to increase. Years ago we gave morphine, but not in the large doses that are given today. We feared the morphine would tend to check kidney activity, and were not successful with the small doses. There is no question but that good effects are obtained in many cases when large doses of morphine have been administered; but, that morphine is to be the treatment of the future for all cases of eclampsia, we hesitate to assert. We cannot expect to get the desired result when a patient is brought into the hospital with eclampsia, merely by giving her routine doses of morphine. And so, having harked back and forth, and even though in the last six years better results have been obtained, we sometimes wonder whether we may not be swinging along the arc of a larger circle with greater radius.

There is no doubt, however, that the incidence of eclampsia at the present time is very much reduced, and we hope and believe that this state of affairs is to be maintained. Ten or twelve years ago, when one of us was in charge of half the work at the Lying-In Hospital, a house surgeon had every appearance of being about to break down from overwork. At the time, part of his work was the care of seven active cases of eclampsia. This was a larger number than usual, but at almost any time we could show examples of this condition. The same thing was true in the other services of the hospital. In contrast to this state of affairs, during 1922, in more than 5,400 deliveries, there were but eight cases of eclampsia with one maternal death during the entire year. A similar result is to be found in the records for 1923. Where cases formerly were in considerable numbers in the hospital at almost any time, now they are so rare that our intern staff and pupils can gain no adequate idea of the gravity of the disease. This seems to be equally true in many other well conducted maternities. Such a state of affairs has been brought about, we believe, by systematic antepartum observation and instruction of the pregnant applicants, coupled with the willing and more intelligent cooperation on the part of the patients themselves in carrying out the idea that the time to treat eclampsia efficiently is long before it occurs. It is our well founded belief, based on the decreasing incidence of eclampsia, that the emergency case should disappear, and that then the many complications and deaths will likewise disappear, or at least be greatly diminished. In our combined service, which averages between 5,000 and 5,500 confinements annually, from a high point in 1914 of fifty-seven cases of eclampsia, the number has steadily dwindled to a low point in 1922 of eight cases. In 1925 we had twelve cases.

We cannot present all the details of such a large series of cases. Too fine comparisons in such lists often prove to be fallacious. In the first place there are undoubtedly two distinct types of toxemia of pregnancy, not always easy to differentiate in the emergency patient just admitted in convulsions. One, the so-called true toxemia of pregnancy which, although it may be severe, is transitory in character. When visual disturbances appear in this class, they are usually due to edema and promptly subside after delivery, leaving no permanent

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

injury. The other is found in patients already handicapped by an underlying cardiovascular nephritic condition prior to conception. Pregnancy, adding its extra demands on such kidneys, not infrequently develops a toxemia which is rather akin to uremia. When symptoms of toxemia appear in this class, there is great danger of retinal hemorrhage and separation resulting in partial or complete permanent blindness. Similar treatment must necessarily give different results in either group. Again, when a patient is admitted already with the massive brain and liver hemorrhages so frequently found at necropsy in these patients, what treatment would be of any avail?

FACTS THAT SEEM FAIRLY WELL ESTABLISHED BY THE FIGURES

Apparently we must be more apprehensive of the convulsive type of toxemia developing in our pregnant patients during the spring months than at any other time. In 1905, one of us (J. A. H.) was able to point this out in a graph, charting 150 cases. A similar group of 853 listed cases of eclampsia occurring over a period of thirty years shows a similar curve of incidence increasing from January to a high point in April, and reaching its lowest in July; again rising during the autumn to the January point. So we might be especially watchful for albumin and rising blood pressure readings during March, April and May.

The gross mortality in the series, including twenty-three who died undelivered shortly after admission, was 23 per cent, 203 deaths in 879 cases. In 1905, in the 150 cases of eclampsia then on the records, the gross maternal mortality was 36 per cent. This was at a time when delivery by accouchement forcé was at the height of its popularity. As we came to realize the disastrous results of such formidable intervention and abandoned it, our mortality rate in eclampsia fell between the years 1906 and 1918 to 20 per cent. In 1918 the use of large doses of morphine, combined with a patient and conservative handling of the delivery, came to be generally employed throughout the hospital and with marked effect on the maternal mortality, so that of 147 patients with antepartum and intrapartum eclampsia consecutively delivered since then to date, and including seven who died undelivered, only twenty-three have died, a gross mortality of 15 per cent. This reduction has been most impressive, yet we must recognize that the routine use of large doses of morphine is empiric rather than scientific, and we do not wish to make extravagant claims for it. Curiously enough, it seems to be of no especial value in the reduction of the mortality rate when used in postpartum eclampsia. Prior to 1918, in 192 cases of postpartum eclampsia, thirty-nine mothers died, a mortality of 20 per cent. Since 1918, there have been forty-two cases of postpartum eclampsia and nine mothers have died, a mortality of 21 per cent—no improvement.

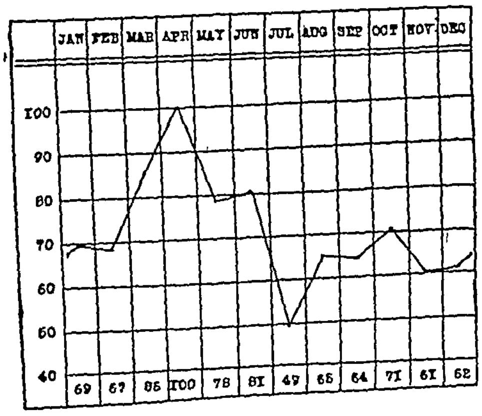

Chart 1.—Monthly incidence in 853 cases of eclampsia extending over thirty years.

The results for the baby with the large doses of morphine and the more conservative method of delivery would indicate that the dangerous effect of large doses of morphine on the fetus has been overestimated. We might almost be tempted to believe that the baby has a better chance with it, as the convulsions of the mother are frequently controlled, and there is less danger of asphyxia for the child. Prior to 1919, in 472 consecutive deliveries of eclampsia patients, there were 175 stillbirths, a stillbirth mortality of 37 per cent, and eighty-six babies who died after delivery, or 18 per cent. These added give a gross fetal mortality of 55 per cent. Since 1919, when the large doses of morphine were more freely used and our conception of obstetric intervention became more limited to obstetric indications, there has been a great reduction in the stillbirth rate and in the babies dying after delivery. In the 134 consecutive deliveries since 1918, twenty-nine babies were stillborn, or 21 per cent; and eighteen died after delivery, or 13 per cent—a gross fetal mortality of 34 per cent as compared with the previous 55 per cent.

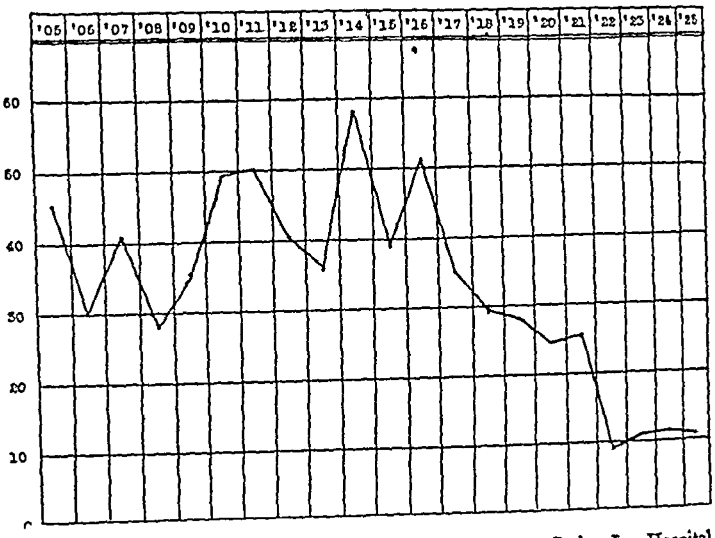

Chart 2.—Annual incidence of eclampsia at the Lying-In Hospital, showing great decrease in recent years.

TREATMENT OF ECLAMPSIA

Naturally, our first endeavor is to avoid the occurrence of the condition. Aside from careful prenatal instruction in right living, this is best done by detecting toxemia in its incipience; watching for the subjective symptoms of increasing nervous irritability and insomnia, or drowsiness, headache and visual disturbances, and for the objective signs in the eyegrounds and especially in the urine and blood pressure readings. More frequent observations on these last two points are imperative. Several patients delivered in the past year have impressed the fact on us that observations during the latter part of pregnancy at intervals of two weeks are not sufficient, and that all pregnant women should have urine and blood pressure examinations made at least once a week during the last two months. A trace of albumin in the urine is so common a finding in many pregnant women during the latter months that blood pressure elevations are much more indicative of danger ahead. Each individual carries within reasonable limits a range of blood pressure peculiar to herself. Below 140 systolic, with other symptoms absent, there need be little cause for concern; but a pressure that is gradually or abruptly rising should put us on our guard. Accompanied by evidences of urinary changes and other symptoms, the danger ahead becomes imminent and such women should be hospitalized at once. They are placed in bed, kept quiet, and when necessary given mild sedatives or even morphine. They are put on a carbohydrate and nonprotein diet consisting of cereals, vegetables and cooked fruits. Elimination is furthered by the use of high colonic irrigations, warm baths and free fluid intake. Glucose is given intravenously. Daily records are made of blood pressure, urinary analysis, and the condition of the eyegrounds. Investigation of the blood chemistry made by Dr. Losee in the hospital laboratory several years ago proved of no value for any assistance in prognosis or treatment.

In some patients treated in this manner, symptoms promptly disappear and they may be allowed to return to their homes, continuing in some measure the treatment as to diet and rest, and being prevailed on to return at weekly intervals. Often they continue to full term delivery without recurrence of symptoms of toxemia. Others at first show moderate response to treatment, and then remain stationary as to blood pressure and kidney symptoms. This continues until they go into premature labor and deliver themselves of a macerated fetus or one that is living but not viable. Again we may see sudden improvement of the condition, followed in a week or so by the expulsion of a macerated fetus whose death was apparently coincident with the cessation of symptoms. Such mothers almost invariably recover, but they must be kept under the closest scrutiny, and unless there is definite response to treatment, pregnancy should be artificially terminated without hesitation or delay. The convulsive type is more apt to occur after the sixth month. As already noted, we have tried the various methods of treating eclampsia as they have appeared. We are gratified to note that comparatively few patients develop eclampsia who have received adequate antepartum care The majority of those admitted are emergency patients who have lacked such care As to the treatment of the convulsive type when it occurs, we have not yet arrived at an entirely routine standard method, but must continue to be guided by the circumstances in each case. Practically every eclamptic patient admitted is given a half grain of morphine hypodermically, at once. This can be done quickly, and soon holds or controls the convulsions. The alimentary tract is emptied by means of colonic irrigations and lavage, followed by 2 ounces of magnesium sulphate through the stomach tube in situ The free use of morphine is then continued in quarter grain doses hypodermically, its physiologic effects being kept well in evidence. We rarely induce labor for the convulsions, and many patients fall in labor spontaneously. Labor should be encouraged and may be shortened safely by easy low forceps.

Table 1.—*Cases Occurring in One Hundred and Fifty-Two Thousand, Two Hundred and Forty-Eight Confinements*

Ante partum	414
Intra partum	118
Post partum	231
Not noted, probably ante partum	74
Patients dying undelivered	23
Patients discharged undelivered	16
Total	879

As to the employment of phlebotomy in the treatment of eclampsia, it is no new departure. For many years we have bled in certain cases, in some of which the improvement was almost startling. In plethoric women, bleeding at delivery is encouraged Often eclamptic patients bleed very little. In the type in which convulsions continue after labor, phlebotomy is of the greatest value. It is a mistake to bleed every patient, especially before delivery. We occasionally see a patient have a sudden fall of blood pressure and the appearance of cardiac failure after delivery. This is likely to be accompanied by pulmonary edema, a common cause of death in eclampsia. Such patients are saved, if at all, by the prompt use of cardiac stimulants, dry cupping the chest, and some effort at drainage of the trachea. Turning on the side may aid. Two patients were apparently carried through their acute pulmonary edema by two courageous house surgeons aspirating the trachea frequently with a tracheal catheter until the cardiac stimulants had a chance to get in their effect. Moore of Philadelphia has devised an aspiration apparatus operating through a bronchoscope that should be of signal service in such emergencies. Of sixty-four patients on whom phlebotomy was done, sixteen died, a 24 per cent mortality. It must be evident that a large, robust, full blooded woman can under such circumstances well afford a considerable loss of blood. This does not hold if the patient is small, ill nourished and anemic.

Table 2.—*Maternal Mortalities in Antepartum and Intrapartum Cases, Including Deaths of Undelivered Patients Grouped According to Chronological Epochs of Treatment*

		Maternal Mortalities	
	Cases	No	Per Cent
Previous to 1906; accouchement forcé popular	125	47	37
1906 to 1918, accouchement forcé abandoned, but 90% operative delivery	370	*75	20
1919 to 1925, conservative method with morphine	149	†23	15

* Including 15 dying undelivered.
† Including 7 dying undelivered

While rather recently the use of magnesium sulphate intravenously has been proposed and tried with apparently good results, our experience has been too limited thus far to allow us to pass judgment on its value. In five cases during the past year, 4 cc. of a 50 per cent solution of magnesium sulphate injected two or three times intravenously, given very slowly, has been of signal success in controlling the convulsions. All five patients recovered. We use the same ampules that we employ in the magnesium sulphate, morphine and rectal ether analgesia for the relief of pain in labor.

Table 3.—*Improvement in Infant Mortality in Six Hundred and Six Cases of Antepartum and Intrapartum Eclampsia*

	Radical Methods Before 1919		Conservative Methods Since 1919	
	Number	Per Cent	Number	Per Cent
Babies born	472	..	134	....
Stillborn	175	37	29	21 5
Babies died	86	18	18	13 5
Total infant mortality	261	55	47	35

Convulsions are admittedly dangerous. We have seen death follow quickly after the first convulsion, usually accompanied by hemiplegia, denoting massive brain hemorrhage. Other patients have had many convulsions, some lasting three and even five minutes, and yet have recovered.

One attack of eclampsia does not necessarily predispose to an attack in a subsequent pregnancy. In several women subjected to cesarean section for eclampsia we have had the opportunity of handling a later pregnancy and delivery, and several others who have subsequently borne children without giving any further symptoms of toxemia. Others have moderate symptoms of toxemia, respond to treatment, and go on and bear full-time children.

We no longer advocate prompt delivery of eclamptic patients by cesarean section. We still believe that in patients who have been under close supervision and who do not appear to improve under the treatment described, life may be conserved by an expeditious abdominal cesarean section.

SUMMARY

1. Eclampsia occurred in 879 cases under our observation during a long series of years, in a large number of confinements.

2. The unmistakable seasonal influence on the incidence of eclampsia as shown in studies of different groups years apart is borne out in the study of our entire number.

3. The remarkable reduction in the incidence of toxemia and eclampsia, with greatly lowered maternal and infant mortality, is due, we believe, to adequate prenatal care, with more conservative treatment and the free use of morphine during the attack.

44 Park Avenue—100 East Sixty-Sixth Street.

MAGNESIUM SULPHATE INTRAVENOUSLY

IN THE CARE AND TREATMENT OF PREECLAMPSIA AND ECLAMPSIA *

LYLE G. McNEILE, M.D.
AND
JOHN VRUWINK, M.D.
LOS ANGELES

Wood,[1] in 1884, in an article to substantiate the inhibitory action of magnesium sulphate, wrote that its intravenous injection was not new. Then, in 1905, the important work of Meltzer[2] was published. This has been the basis for the subsequent use of the salt in controlling the convulsions of tetanus, and in establishing its anesthetic properties. Moreover, he definitely advised against intravenous administration because of the danger of provoking respiratory failure. In 1916, Meltzer[3] gave a comprehensive outline of the action and use of magnesium sulphate in tetanus, and, in a measure, retracted his previous definite statement regarding the risk of intravenous injection, yet emphasized a probable danger.

Weed and McKibbon,[4] in 1919, reported an important series of experiments, demonstrating that cerebrospinal fluid pressure and brain bulk may be varied by hypertonic and hypotonic solutions. They also stressed the fact that certain hypertonic solutions—sodium chloride—caused respiratory failure and that some cats were much more sensitive than others.

Foley and Putnam,[5] in view of this danger, gave hypertonic and hypotonic solutions by mouth and recorded similar results, except that the action was somewhat delayed. May not this, rather than elimination, account in part for the universal use of magnesium sulphate by mouth in the prophylactic and active care of the toxemias of pregnancy?

Meltzer and Auer,[6] Blake[7] and Gwathmey have emphasized the anesthetic properties of magnesium sulphate, and their opinion has been rather definitely substantiated by clinical experience, not, however, without danger, when given in large doses; for Curtis[8] reported an apparent death when 310 cc. of a 4 per cent solution was given subcutaneously preparatory to operation.

A series of experiments and its use in a clinical way emphasize certain properties of magnesium sulphate which give the following reactions: 1. It can control convulsions, at least of the tetanic type. 2. In a hypertonic solution, it will decrease cerebrospinal fluid pressure and reduce brain bulk. 3. It has anesthetic properties.

The convulsions of tetanus may be controlled by magnesium sulphate given intraspinally, subcutaneously and intravenously. Without question, Meltzer has proved that this salt reduces nervous irritability. It is definitely true that the pathologic changes in tetanus and in eclampsia are radically different, yet the convulsions are due to increased irritability of the higher centers, due to different origin, but irritability nevertheless. If magnesium sulphate will control eclamptic convulsions, by inhibiting central nervous excitability, it will have a place in the management of eclampsia.

A 10 per cent solution of magnesium sulphate is a hypertonic solution, and we may definitely expect to reduce both cerebrospinal fluid pressure and brain bulk. In eclampsia, this is unquestionably a part of the known pathologic condition; its use is a rational means of limiting this.

Anesthetics, in various forms, have been given for the control of convulsions, but most anesthetic agents have a deleterious effect on the parenchymatous organs, and retard elimination. We have an agent in magnesium sulphate which has proved anesthetic qualities and which in some way also decreases the congestion and swelling of parenchymatous tissue—especially the kidney—and thus aids in excretion. There is probably no effect on alimentary elimination; nor is there the inhibiting effect on peristalsis that we find with morphine or its derivatives.

We are frankly aware of the fact that from time to time enthusiastic measures have been advocated for the care and treatment of eclampsia. We also know that the etiology of eclampsia is yet unknown and that rational therapy depends on definite knowledge of causation. No empiric treatment can be dogmatic, and we offer this study of magnesium sulphate intravenously only as a valuable adjunct for the care of the acute toxemias of pregnancy. It may not always accomplish satisfactory results alone, but we are convinced that, in conjunction with other recognized measures, it will give better and more definite relief. Our own first efforts included the established procedures for the care of eclampsia; but, as our experience with the salt increased, our timidity ceased, until now we very frankly believe

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[1] Wood: M. Record, 1884.

[2] Meltzer, S. J.: M. Record 68: 965, 1905.

[3] Meltzer, S. J.: Inhibitory Properties of Magnesium Sulphate and Their Therapeutic Application in Tetanus, J. A. M. A. 66: 931 (March 25) 1916.

[4] Weed and McKil [illegible] 531 (May) 1919.

[5] Foley, F. E. B., and Putnam, T. J.: Am. J. Physiol. 53: 464 (Oct.) 1920.

[6] Meltzer and Auer: J. Exper. Med. 23: 563, 1916.

[7] Blake: Surg. Gynec. Obst. 2: 541, 1906.

[8] Curtis, A. H.: Magnesium Sulphate Solution as an Aid in Anesthesia, J. A. M. A. 77: 1492 (Nov. 5) 1921.

that we can usually depend on intravenous medication to prevent and control convulsions.

In the preeclamptic type of toxemia, the intravenous injection of 20 cc. of a 10 per cent solution of magnesium sulphate nearly always gives immediate relief from subjective symptoms. The patient frequently comments on the immediate disappearance of the sense of "constriction" or "impending disaster." We believe this immediate comfort primarily due to the anesthetic properties of magnesium sulphate. Administration of the drug is usually followed by some reduction in blood pressure, reduction of edema (probably including cerebral edema), and an increased output of urine.

During the convulsive stage of a toxemia of pregnancy, the intravenous injection of 20 cc. of a 10 per cent solution of magnesium sulphate will generally stop, or at least limit, the number of convulsions. It may be, and usually is necessary to repeat the injection, both for the control of convulsions and for the relief of other toxic symptoms. The use of this drug apparently not only controls the convulsions but exercises a favorable influence on other symptoms due to acute lesions in the parenchymatous organs.

The risk of producing respiratory failure by this method was first emphasized by the man who has done most in establishing the value of this salt. The very definite and happy results first obtained at the Los Angeles General Hospital led us to find ampules of prepared solution. One of the large pharmaceutical houses refused to furnish this solution because its research department emphasized the danger of intravenous injection. We then obtained ampules from a firm in San Francisco and later in Los Angeles. This solution is a sterile, chemically pure, triple crystallized anhydrous salt dissolved in 20 cc. of triple distilled water of 10 per cent magnesium sulphate, in ampules of the hardest glass obtainable. There is no addition of calcium chloride. We do not hesitate to repeat 20 cc. of this solution every hour when necessary, if the convulsions are not controlled or are imminent. Usually one or two injections are sufficient, though as many as eight in twenty-four hours have been given.

Fischer[9] states that the salt may be safely used in a 2 or 2.5 per cent solution up to 8 Gm. of the salt, and advises 200 cc. of such solution for a first dose.

Bowman[10] gave 10 cc. of 10 per cent magnesium sulphate intravenously every four hours for six or eight doses in a series of cases of brain injury, with only satisfactory results and no evidence of poisoning.

The question of respiratory failure and individual sensitization is far more difficult. It may be that there is an increased tolerance in toxic women, for in a series of 520 injections, practically all consisting of 20 cc. of a 10 per cent solution, this danger was never encountered. We advise that the salt be injected very slowly, and if respiratory symptoms should develop, it is easy to inject sufficient calcium chloride through the same needle immediately. A small amount of calcium chloride is specific for such respiratory failure and gives immediate relief, according to Meltzer.

Fischer, in 1916, first used magnesium sulphate intravenously for eclampsia. He believed that the convulsion was an expression of an acute acid intoxication with edema of the central nervous system. He used 250 cc. of a 2 per cent solution to further dehydration.

Loomis and Sherrick of Oakland, Calif., and one of us (L. G. M.) used magnesium sulphate intravenously for eclampsia in 1916. Loomis and Sherrick still use the more dilute solution, 2 per cent with 0.7 Gm. of calcium chloride to the liter, and the dose varies with the patient from 250 to 300 cc. They also use bleeding, increased fluid intake, high colonic flushings and saline catharsis, and recommend heavy doses of morphine in 2 cc. of 50 per cent magnesium sulphate subcutaneously.

Alton and Lincoln[11] controlled the convulsions of eclampsia in four patients by small intraspinal injections of 25 per cent magnesium sulphate. They quote seven observers who have used the salt intraspinally, subcutaneously and intramuscularly.

Dorsett[12] recently reported thirty-eight cases with very definite good results following the intramuscular injection of 15 cc. of a 25 per cent solution.

Lazard,[13] in a preliminary report, gave the result in the first seventeen eclamptic patients observed at the Los Angeles General Hospital.

We were greatly interested at this time to read the excellent results obtained by Blackfan and Hamilton[14] in the treatment of uremia in acute glomerular nephritis in children, by the use of a 1 per cent magnesium sulphate solution intravenously, and of larger doses by mouth and rectum.

The Los Angeles Obstetrical Society, two years ago, appointed a committee (Lazard, Irwin and Vruwink) to study, collect and report on the results of magnesium sulphate intravenously in eclampsia. This extended report with case records has been prepared for publication, and the startlingly good results have verified the earlier predictions regarding its use. This report includes all the known instances in which magnesium sulphate has been used intravenously in concentrated solution for the prevention and control of eclampsia. Most of such cases were collected in and around Los Angeles. The series consists of 142 records, forty-five of preeclamptic and 103 of eclamptic patients. Of the preeclamptic patients, twenty-three were at the Los Angeles General Hospital and twenty-two were private patients. Six of the preeclamptic patients developed convulsions and were therefore classified as eclamptic. Thirty-eight delivered spontaneously, three labors were induced, and five were assisted in labor by forceps or version and extraction. There were seven elective cesarean sections, all in private practice. There were twenty-four living babies, six premature stillborn and three full term stillborn babies.

In the eclamptic series, there were 103 cases, fifty-four at the General Hospital and forty-nine in private practice. Eighty-nine patients recovered and fourteen died from all causes, giving a gross mortality of 13.6 per cent. Of these deaths, one occurred three weeks post partum from sepsis, after the patient had definitely recovered from her eclampsia. One died six days after her last convulsion on the operating room table during cesarean section, from shock; the uterus was eventrated. One patient had bronchopneumonia and pulmonary edema, and was moribund when admitted to the hospital. Two, as proved by necropsy, had no liver changes of eclampsia and presented true cases of nephritis. A correction for these deaths is unquestionably permitted in a discussion of the effect of magnesium sulphate in eclampsia, and we have 100 cases with nine deaths with a mortality of 9 per cent. There were seven deaths from toxemia at the General Hospital in patients poorly qualified to withstand the shock of toxemia. There were seventy-five babies born in antepartum or intrapartum eclamptic mothers. Six patients died undelivered. In each instance, operative intervention would only have increased the already grave prognosis. There were forty-eight living babies, sixteen premature stillborn and ten full term stillborn infants.

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[9] Fischer, M. H.: Detroit M. J. **16**: 1, 1916.

[10] Bowman, E. C.: South. M. J. **18**: 351, 1925.

[11] Alton, B. H., and Lincoln, G. C.: Am. J. Obst. & Gynec. **9**: 167 (Feb.) 1925.

[12] Dorsett, L.: Am. J. Obst. & Gynec. **11**: 227, 1926.

[13] Lazard, E. M.: Am. J. Obst. & Gynec. **9**: 178 (Feb.) 1925.

[14] Blackfan, K. D., and Hamilton, B.: Boston M. & S. J. **193**: 617 (Oct. 1) 1925.

The mortality rate at the Los Angeles General Hospital in the preceding five years was 36 per cent. With magnesium sulphate, this was reduced to 14.8 per cent, a reduction of 60 per cent. The evident excellent results attained by the intravenous injection of magnesium sulphate and no other measures naturally led to its use in preeclamptic toxemias, so that of forty-five patients with definite preeclampsia, only six developed convulsions after its use.

The majority of our patients at the General Hospital are Mexicans, who are poor surgical risks. Very few have had prenatal care, and the results obtained with this class of patient at the General Hospital should be, and are, greatly inferior to results in patients with more resistance.

The prognosis in definite nephritic types is bad, and all known measures of diagnosis should be instituted to eliminate this group; particularly in early stages, termination of labor is of value in curbing the progress of disease in the kidneys. In the enthusiasm and zeal to treat the eclamptic feature of pregnancy by conservative measures, one should always be on guard to deal with the dystocia of labor. Abnormal labor in the presence of eclampsia is entirely possible and must be managed according to the dictates of good obstetrics, regardless of the presence or absence of convulsions.

The effect of 20 cc. of a 10 per cent solution of magnesium sulphate was first tried at the General Hospital by Emil J. Bogen, a pupil of Martin H. Fischer, in May, 1924. The first patient, an eclamptic woman moribund on admission, died, but the succeeding four patients recovered promptly and completely with no further medication or intervention. Magnesium sulphate infusions have been the basis for all subsequent treatment of the toxemias of pregnancy at the General Hospital and in private practice. It was a little difficult to adjust ourselves and give only this intravenous medication; but, as our results improved with decreased handling and less medication, the following scheme of treatment for all the General Hospital patients was advised.

A. *Treatment of Preeclamptic Toxemia:*

1. Usual restriction of diet (nonprotein-salt free).
2. Pushing of fluids.
3. Bowels kept active with magnesium sulphate, one-half ounce daily.
4. Daily output of urine measured (chemical and microscopic examination daily).
5. Blood pressure taken twice daily.
6. Twenty cc. of 10 per cent solution of magnesium sulphate to be administered intravenously when systolic blood pressure is 150 or over, repeated if indicated (by rise of blood pressure or increase in other symptoms of toxemia).
7. Interruption of pregnancy only to be done with consent of senior attending obstetrician. (Termination of pregnancy is indicated only when symptoms persistently recur and do not respond to treatment.)

B. *Treatment of Eclampsia:*

1. Twenty cc. of 10 per cent magnesium sulphate intravenously as soon after first convulsion as possible; repeated every hour after until convulsions are controlled.
2. Blood pressure taken every hour after convulsions are controlled, and if blood pressure begins to rise nearing its height at time of convulsions, magnesium sulphate repeated; also repeated if convulsions recur.
3. Patients who are comatose or very restless in a semicomatose delirium and whose blood pressure is falling should receive chloral hydrate, 20 grains (1.3 Gm.), and sodium bromide, 60 grains (4 Gm.) by rectum.
4. Utmost quiet to be observed and nurse to be constantly with patient until latter is out of coma.
5. Oxygen inhalations to be given after each convulsion until breathing is normal.
6. All patients to be prepared for delivery as soon as they are quiet enough to do so.
7. If patient is in labor, nitrous oxide gas for pains.
8. If in second stage of labor and proper progress is not being made, low forceps extraction or version, with the consent of attending obstetrician.
9. No cesarean section to be done without consent of the senior attending obstetrician.
10. Attending obstetrician to be notified as soon as any eclamptic patient is received in the ward.

The active care of our eclamptic patients has resolved itself into the very conservative rôle of providing elimination, usually with saturated magnesium sulphate by mouth, protecting the patient in the usual manner, and controlling the convulsions with repeated doses of intravenous magnesium sulphate. The subsequent coma and acidosis present a problem which must be considered and treated by other measures. We still believe that the pregnancy should at times be interrupted, but only when repeated injections of sulphate do not give protracted and permanent relief, and never during the active period of a convulsion.

We definitely plan to control convulsions and promote elimination. Magnesium sulphate is not advised for the relief of coma. Other factors enter into the production of coma, which require other measures of therapy. In our opinion, these are rest and measures for the reduction of acidosis. It does not include radical procedures to empty the uterus. The comas subsequent to uremia and cerebral hemorrhage are as difficult to deal with as they are outside the pregnant state, and the prognosis is equally grave.

In spite of the reduction of a gross mortality of 36 per cent to a gross mortality of 14.8 per cent, in the General Hospital eclamptic series, our greatest enthusiasm centers about the reduction in morbidity in the preeclamptic series. Prophylactic magnesium sulphate intravenously in twenty-three cases prevented convulsions, except in three cases, and in the entire series there was not a single cesarean section. There is some difference of opinion regarding the necessity of terminating labor. We believe that, if there is no constant and protracted alleviation of symptoms, the best interests of mother and baby are served by interrupting the pregnancy. In the primipara, we prefer cesarean section under local, gas or spinal anesthesia, and in the multipara, by more conservative measures. Repeated records show, however, that patients, even after repeated convulsions, may be carried several weeks to term and spontaneous labor.

In hypertonic magnesium sulphate, given intravenously in doses of from 10 to 25 cc. of a 10 per cent solution, we definitely believe that we have an agent that will usually prevent and control convulsions. We believe that this action is due first to its anesthetic and inhibiting properties and maintained by relieved tissue edema, particularly of the brain. If clinical observations continue to prove this action, we should find in magnesium sulphate intravenously an ideal combination for the therapy of puerperal toxemia. The pathology of eclampsia is definite and further treatment is necessary to relieve tissue injury, to prevent acidosis, to aid in anabolic processes, and to provide elimination. If definite improvement is not maintained following injection, we believe that the pregnancy should be terminated. As a prophylactic agent, it will give definite results, the toxic symptoms will frequently disappear entirely, or the condition will be arrested and the patient go on to normal labor. If, on repeated injections, the toxic symptoms recur, pregnancy should be terminated. Regardless of the eventual course of the toxic state, intravenous medication places our patient in a condition with increased resistance and eliminates the dangers subsequent to convulsions both for the mother and for the baby. The observations of Blackfan and Hamilton aid in this assumption.

It may be later established that the method of Fischer, Loomis and Sherrick, of adding more water, and particularly calcium chloride, to the infusion, may be the method of choice. In our hands, however, we have had no respiratory failure. A smaller dose, we believe, may be given with less discomfort and with greater facility. The demand for increased fluid may be met preferably as a glucose infusion.

CONCLUSIONS

1. The intravenous injection of a 10 per cent solution of magnesium sulphate is a valuable adjunct in our treatment of the toxemia of pregnancy. It will cause some reduction of blood pressure, reduce edema, increase urinary output, and reduce or control other symptoms.
2. The intravenous injection of a 10 per cent solution of magnesium sulphate will control the convulsions of eclampsia in nearly every case, and exercises a favorable influence on the other symptoms of eclampsia.
3. It is a safe procedure.
4. Further investigation should be made to determine the relative value of the dosage outlined herein, as compared with the lower percentage and larger volume.

1021 Pacific Mutual Building.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. POLAK, GREENHILL, DAVIS AND HARRAR, AND MC NEILE AND VRUWINK

Dr. E. M. Lazard, Los Angeles: In the Los Angeles General Hospital we have had in the last two years fifty-eight cases of the convulsive type of eclampsia, out of approximately 2,400 cases, or about 2.5 per hundred, which is a reflection on the prenatal care, or lack of prenatal care, in and around the city of Los Angeles for the poor patients. An explanation possibly is in order. The Los Angeles General Hospital serves not only the city of Los Angeles but also the entire county, a population in the neighborhood of 2,000,000, serving all the poor, with many patients transported many miles. Many of our eclamptic patients have been brought in, in the eclamptic state, transported from 10 to 30 miles to the hospital, so that our cases are as a class neglected cases. As our incidence is high, the cases that we have treated have been severe, and that, I think, explains the high mortality as well as the high incidence, the mortality being 36 per cent in the five years immediately preceding the beginning of this method of treatment; this mortality has dropped to 14.8 per cent under the magnesium sulphate treatment. The cases that were outside the General Hospital and in the hands of private practitioners, and had more or less competent prenatal care, numbered forty-nine, with a mortality of five. One of these patients who died had nephritis without any eclamptic changes in the liver, and another had been operated on after recovery from eclampsia. We have also been encouraged in the results we have obtained in preeclamptic patients who received magnesium sulphate intravenously in addition to the usual treatment.

Dr. Joseph L. Baer, Chicago: My own views on the toxemia and eclampsia of pregnancy were presented by Dr. Polak. There was one point in his outline, however, on which I should like to comment. He deprecated the value of blood chemistry until after delivery. A great deal has been done by urologists and internists in the field of renal pathologic physiology; so much, in fact, that we of the Section on Obstetrics and Gynecology have been left somewhat behind. It behooves us to take cognizance of their work and endeavor to apply it to our field. There is no doubt that renal disability which occurs in the absence of pregnancy is further augmented by the presence of pregnancy. The split products of placental and fetal metabolism which act as irritants to the kidney are just that much additional trauma to which the kidney is subjected. Heretofore, in this country, blood chemistry has resolved itself essentially into an estimation of the nonprotein nitrogen. There is no doubt as to its value. Unfortunately, however, in the second half of pregnancy, a woman given a liberal intake of protein will show an excessive nonprotein nitrogen without any other symptoms of toxemia or the preeclamptic state, and, likewise, women under careful control with apparent cessation of all symptoms may suddenly get an exacerbation of symptoms from no apparent cause without a previous increase in nonprotein nitrogen. There are present in the blood, in the presence of a nephritis, a trauma of the renal vascular system, two substances, indican and xanthoprotein, both of which are in excess and both of which should be detectable in the blood. The point they emphasize is that both these aromatics appear early and persist. In the absence of all clinical symptoms there is still indican and xanthoprotein in excess. If this is true, applied to our own specialty it would be invaluable, and it leads to the thought, which I should like to offer as a hypothesis, that a pregnant woman does not become nephritic because she is eclamptic, but she becomes eclamptic because she is already nephritic. We must detect these nephritic conditions early, when the toxemia first makes its appearance; therefore, our ideal routine, in the care of the pregnant woman, would be regular, minute urinary examinations and frequent blood pressure readings; tests for hyposthenuria, or rigidity of the kidney, so-called concentration tests and freshet tests; estimation of the output of chlorides, and lastly, in the suspicious cases, complete blood chemistry studies.

Dr. O. H. Schwarz, St. Louis: Dr. Dorsett of St. Louis has now treated with magnesium sulphate forty-five cases of eclampsia with convulsions. He used the drug intramuscularly, 15 cc. of a 25 per cent solution. We have used 5 cc. doses, repeating them as indicated, and have controlled convulsions with as little as 10 cc. of a 25 per cent solution. In the treatment of pernicious vomiting of pregnancy, we have followed out about the same line of treatment as Dr. Polak outlined. We have now treated more than twenty severe cases without resorting to therapeutic abortion. We agree with Dr. Polak that a therapeutic abortion is seldom indicated. A rather interesting fact has come to my attention recently in studying the gastric juice of women in early pregnancy. Dr. Arzt found that there frequently was a complete absence of free hydrochloric acid. In running fractional analyses in a series of twenty-six cases he found that both the total, as well as the free, hydrochloric acid was markedly diminished. This would appear at first thought to mean that there is a diminution in the secretion of free hydrochloric acid in early pregnancy. Dr. Duff Allen, who is now working on the formation of carbon dioxide in the stomach, suggested to us that this apparent absence of hydrochloric acid might be due to regurgitation of alkaline duodenal contents which contained a considerable amount of sodium carbonate, thus neutralizing the hydrochloric acid in the stomach. In making chloride analyses in eight of these cases, a normal chloride content was found. This would suggest that regurgitation was very probable. Irrespective of the cause of this apparent achlorhydria, it would seem advisable to give diluted hydrochloric acid (U. S. P.) in small doses in early cases of nausea and vomiting in which this achlorhydria exists. This has been done in twenty cases in our service with astonishing results; and since the administration of diluted hydrochloric acid is a harmless procedure, we do not hesitate to suggest it as an additional means of helping mild cases of nausea and vomiting in early pregnancy.

Dr. J. P. Greenhill, Chicago: I realized that few obstetricians would agree with me in advocating termination of pregnancy for eclampsia. This belief was based on the fact that within recent years many obstetricians who formerly favored emptying of the uterus returned to conservative therapy. In large part the change in treatment may be attributed to the bad results obtained by accouchement forcé. Dr. Davis' statistics and mine are not from a very select class of patients, as Dr. Lazard might lead one to believe. A large proportion of our patients were sent to us after they had had convulsions at home, and the majority of these were admitted in coma. Dr. Davis' statistics which show a reduction in the maternal mortality from 36 per cent in 1905 to 15 per cent, and a reduction in fetal mortality from 55 per cent to 34 per cent for recent years when conservative therapy was practiced, are still much higher than the figures I presented. Dr. Vruwink's maternal mortality was almost 15 per cent. Our uncorrected maternal mortality was 7.7 per cent, and our uncorrected fetal mortality was 27.7 per cent. Hence, even though in individual hospitals there have been definite decreases in the mortality rates, they have not come down to the figures quoted for the Chicago Lying-In Hospital, where active treatment is the rule. I realize that Dr. Lazard's statistics might have shown better results had they come from a purely lying-in hospital. Our results are based on care in a special maternity hospital where most of the operative procedures are carried out by persons who are especially trained in obstetrics. I emphasized that for the man who is not a specialist or skilled in obstetrics or one who must work in a general hospital, where obstetric cases and pus cases are treated in the same rooms, there is great danger in attempting to operate, especially on eclamptic patients. I fully agree with Dr. Polak about the value of blood chemistry and the use of anesthesia. Toxemic patients cannot tolerate inhalation anesthesia very well. For that reason I emphasized that local anesthesia should be used whenever possible.

Dr. Asa B. Davis, New York: I did not quite complete our method of treatment. We have no routine treatment. Our idea is that each case should be treated individually, and we find that many of these women go into labor spontaneously. We assist where it is possible without too much interference. A certain number of cases are better treated by cesarean section. Sometimes we find that they are like a ship running on the rock, liable to wreck, and we are trying to salvage what we can—the mother and the child if we can, or either one of them, and we can often do that after treatment has failed. When they are growing worse all the time apparently, our routine treatment, as much as we have one now, is to give a hypodermic of morphine immediately after admission to the hospital. We then wash out the stomach, and while the tube is in place, we put in 2 ounces of magnesium sulphate. That has been our treatment for years. As we get farther along and have more time to handle these cases, we can clear up the intestinal tract by high colonic irrigations. The patient is kept quiet so far as possible. We are not apt to bleed before delivery. We have used this treatment for thirty years and in some cases the results are perfectly startling. We have no more trouble, or only a few weak convulsions, and the thing ends. We have not undertaken to any extent the treatment by magnesium sulphate intravenously. Dr. Harrar became interested in it, and just before we came away he told me that in five cases he had tried this, using a 50 per cent solution, 2 cc. intravenously, and there were no more convulsions.

Dr. John Vruwink, Los Angeles: When we went over the case reports, we were astounded by the variation and multiplicity in individual treatment. Everything ever suggested was attempted on the same patient—gastric lavage, colonic flushings, veratrum viride hot packs, morphine, bleeding and insufficient sulphate by vein. The individual physician has only an occasional eclamptic patient; there is no standard treatment, and it is small wonder to see the many attempts to relieve a fearful condition. We were fortunate in having most of the men in the vicinity of Los Angeles interested in the work on magnesium sulphate, and it was for that reason that we were able to get the number of eclamptic patients that we did. With the use of magnesium sulphate, we are trying to eliminate as much as possible the things we do not believe are essential. We believe that we can eliminate all gastric lavage; we believe that we can eliminate all colon flushings, hot packs and veratrum viride. We are not so certain that we can eliminate the use of morphine entirely, but we are fairly sure that we can eliminate bleeding. We know we can control the number of convulsions and we believe that we do, in some way, detoxicate our patients, and we know that patients who have suppression of urine frequently void from 500 to 1,000 cc. of urine after injections of magnesium sulphate *intravenously, with no other* medication or treatment.

Clinical Notes, Suggestions, and New Instruments

WATER-DRIVEN BREAST PUMP

Isaac A. Abt, M.D., Chicago

It has frequently occurred to me that a breast pump might be devised in which the suction is produced by water pressure. Such a pump could be used in any home by attaching it to a water faucet. The advantages of this water-power breast pump would obviously be its low cost and ease with which it could be carried about.

The first experiments with a water pump, conducted some three years ago, were unsatisfactory. It produces suction only, and, unlike the electric pump, there is no alternate back pressure which relieves the congestion in the nipple occurring during each suction impulse. As a consequence, the nipples became sore in our first experiment with the water-driven pump. Therefore the idea was temporarily abandoned. Subsequent tests have shown that a water-driven pump can be successfully used in conjunction with a suction-regulating device, when it is desired to promote the flow of milk. It is necessary for the successful operation of this device that the suction be regulated and not excessive, and that after each moderate pull there be a pause produced by release of the suction. The water pump can also be used to ascertain the quality of milk the mother produces and to draw out inverted nipples. On the other hand, the device is far less efficient than the electric breast pump in stimulating the milk secretion and in reestablishing milk in a dry breast. Furthermore, the water pump does not succeed as well in fissured nipples and in engorged or caked breasts, in which the back pressure afforded by the electric machine proves of the greatest benefit.

In detail, the water power breast pump works as follows:

The nipple shield empties the milk directly into a 4 ounce nursing bottle. The evacuating tube and the nipple shield are made in one piece for sanitary reasons. With a 4 ounce nursing bottle much better results are obtained than with larger bottles, because the suction rises more quickly from zero to the desired maximum when a smaller volume of air has to be exhausted. As a result, the effectiveness of each suction impulse is increased without increasing the suction time.

Still more efficient than the 4 ounce nursing bottle is the small bottle used with the electric machine. When stimulation of milk secretion is needed, this small bottle should be employed. The water pump produces continual suction as long as the breast seals the nipple shield air tight. Alternate suction and release is accomplished by opening and closing a small hole located conveniently at the nipple shield. A finger of the hand which holds the bottle opens and closes the aperture. A vacuum indicator shows the intensity of the suction. Experience has shown that it is difficult to make some mothers operate the device with the greatest efficiency because they make and break the suction either too fast or too slow. They do not relieve the suction sufficiently long after each impulse.

Tests have shown that the best results are obtained when between thirty and forty suctions per minute are applied, and when the release period after each suction impulse is as long as the suction period. The manufacturer will furnish a weighted string with the appliance, which, when used as a swinging pendulum, will indicate to the mother the proper time of suction and release.

It is, of course, preferable to have the suction interrupted automatically, and the manufacturer hopes to perfect an automatic process in the near future.

The intensity of the suction is regulated by increasing or diminishing the stream of water that runs through the pump. Unfortunately, water pressure is so low in some localities that these pumps cannot always be operated effectively.

104 South Michigan Avenue.

A SCARLATINOID INFECTION DUE TO STREPTOCOCCUS VIRIDANS *

Edward Steinfield, M.D., Philadelphia

During the winter of 1925-1926 there was noted with considerable frequency an acute infection due presumably to a *Streptococcus viridans* which was uniformly recovered from the throat and inflammatory exudates. The occurrence of a cutaneous eruption and a predilection to produce hemorrhagic nephritis were the causes of some confusion in differentiating this syndrome from true scarlet fever due to the hemolytic streptococcus. All ages were affected and in many instances most of the members of the same household. The onset was sudden and resembled grip or influenza, with fever of from 101 to 103 F., intense headache, nausea and vomiting. Herpes was absent. The throat was markedly injected, the pulse was rapid out of proportion to the temperature; there were no pulmonary signs throughout the course. A moderate leukocytosis was the rule. In from twenty-four to forty-eight hours an indefinite exanthem appeared over the trunk and to a lesser extent on the extremities. This slightly resembled a scarlatinal eruption, but areas of small papular lesions often were mixed with the punctate rash; this appearance, however, is occasionally noted in true scarlet fever. Desquamation was of a fine or furfuraceous character. A hemorrhagic nephritis frequently appeared at the time of the exanthem or several days later, ushered in by a marked diminution in the twenty-four hour quantity of urine. Singularly, this condition was noted with greater frequency than in the true scarlet fever which was prevalent during the same period. The urine was smoky or bloody in appearance, and contained large amounts of albumin, red blood cells, blood casts and granular casts. A number of cases were observed in which a hemorrhagic nephritis appeared though no exanthem was noted; these varying combinations were at times seen in members of the same family. The duration of the febrile period was from one to two weeks, but was protracted if complications ensued. These complications included peritonsillar abscess, retropharyngeal abscess, otitis media, sinusitis, suppuration of the cervical lymph nodes and, in one case, erysipelas. *Streptococcus viridans* or occasionally the anhemolytic (gamma) streptococcus was uniformly recovered in pure culture from the exudates.

DIFFERENTIAL DIAGNOSIS

The infection was differentiated from scarlet fever on clinical grounds because of its infectivity for all ages (even up to the seventh decade), which is the exception rather than the rule in scarlet fever; by the atypical nature of the exanthem as described above, and more conclusively by a subsequent infection with true scarlet fever, which was noted in two patients.

BACTERIOLOGY

Cultures from the throat and exudates of inflammatory complications elicited a *Streptococcus viridans* in contrast to the presence of the hemolytic streptococcus, which is now implicated as the etiologic agent in true scarlet fever. The majority of the strains that were studied fermented lactose and salicin, but not mannitol. A toxin was prepared by the method utilized by the Dicks in the production of toxin from scarlatinal hemolytic streptococci. Definite intracutaneous reactions could be elicited in normal subjects in dilution of 1:500, showing apparently a weaker production of toxin than the Dick toxin, at least in its power of cutaneous irritation. Controls of toxin heated at 100 C. for one hour were used to detect pseudoreactions. Similar tests after neutralization with convalescent serum could be carried out in only a few instances, because of inability to follow up these cases. It was possible, however, to demonstrate this neutralization by the serum of two convalescent patients, whereas controls of normal serum had no effect. The comparison of Dick tests with the *Streptococcus viridans* toxin during the infection and after convalescence was not carried out.

The prognosis was favorable, and even marked cases of hemorrhagic nephritis tended toward recovery. The favorable action of scarlatinal antitoxin, which was at times used when the diagnosis was in doubt, may be attributed to the close biologic relationship of these strains and possibly, in part, to a nonspecific reaction.

Central Medical Building.

REAPPEARANCE OF REACTION AT SITE OF PREVIOUS DICK TEST COINCIDENT WITH APPEARANCE OF MEASLES RASH IN A CASE OF MEASLES *

N. S. Ferry, M.D., Detroit

S. F., a man, aged 21, who had not had scarlet fever, had been acting as a test subject for the standardization of scarlet fever toxin and antitoxin, and usually exhibited a typical Dick reaction from 2 to 3 cm. in diameter.

April 6, 1926, he was given, on the anterior surface of the right forearm, two intracutaneous injections of scarlet fever toxin, one containing 5 skin test doses of standard toxin as furnished by the Hygienic Laboratory, Washington, and the other, two inches below, containing 1 skin test dose of test toxin.

At the same time, two intracutaneous injections of 5 skin test doses of toxin were given on the left forearm, each neutralized with scarlet fever antitoxin, the upper injection containing more antitoxin than was sufficient to neutralize the toxin. As neither of the last two sites showed a reaction at the end of forty-eight hours, while the toxin reaction on the right arm was positive, the toxin was considered neutralized.

April 8, two more intracutaneous injections of 3 skin test doses, each of the same toxin, were made into the skin of the right arm just below the deltoid. Both reactions reached a diameter of 3 cm. and faded completely in seventy-two hours, at which time all reactions had disappeared.

By April 14, the patient had contracted a light case of measles with a typical rash covering the entire body. At the same time there appeared localized bright red reactions at the sites of the previous Dick tests mentioned above, with the exception of the site on the left arm into which had been injected the overneutralized mixture of toxin and antitoxin.

The second Dick reactions appeared very similar to the first, as to both size and intensity, and were easily distinguished from the measles rash. These reactions persisted for about twenty-four hours and then rapidly faded. The reaction on the right arm, at the site which received the largest dose of toxin (5 skin test doses), was the last to disappear, the measles rash in the meantime remaining unchanged.

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* Bacteriologic studies from the Laboratories of the Jewish Hospital.

* From the Medical Research Laboratories, Parke, Davis & Co.

COMMENT

It is hard to conjecture just what this phenomenon signifies. It is doubtful, however, that it is in any way an evidence of the relationship of the two diseases or the organisms causing them unless there is a nonspecific toxin or poison, common to the organisms causing these diseases, which is found associated with their specific toxins.

The last statement is based on the assumption that the toxin obtained from *Streptococcus scarlatinae*, as described by the Dicks,[1] is a true toxin and specific to scarlet fever, and that the toxin obtained from *Streptococcus morbilli*, as described by Ferry and Fisher,[2] is specific to measles.

That the two organisms and their toxin differ, there is no doubt. *Streptococcus scarlatinae* is of the hemolytic variety, while its toxin, which is neutralized by scarlet fever convalescent serum and not by measles convalescent serum, has so far failed to produce a typical reaction in the rabbit. *Streptococcus morbilli* of measles, on the other hand, is a typical *Streptococcus viridans*. It produces a true toxin, which is neutralized by measles convalescent serum and not by scarlet fever convalescent serum and which stimulates a typical skin reaction in the rabbit. Also, the antitoxin produced in an animal by either one of these organisms will not neutralize the toxin from the other, as was shown by Ferry and Fisher.

THE DIAGNOSIS OF GONORRHEA BY CULTURE

R. B. H. Gradwohl, M.D., St. Louis

The clinical pathologist, the urologist and the gynecologist are frequently consulted in obscure and uncertain cases of urethral, vaginal and uterine discharges. The time-honored method has been to make one stain with ordinary methylene blue and another by the gram stain. If gram negative diplococci are found, some have had the temerity to call them gonococci. I myself have always been averse to doing so, making my reports read "gram-negative diplococci found, resembling gonococci." This, of course, is an inconclusive and often useless report.

In order to make a proper bacteriologic diagnosis, I have from time to time attempted to cultivate the organism present and prove its identity. I have used a number of mediums recommended by various authorities, such as blood serum and ascitic fluid agar and milk agar. Success has not always attended my efforts. The gonococcus does not grow readily on ordinary mediums. It does not show its characteristics on many special mediums.

I endeavored to find a method of making a reliable diagnosis of gonorrhea by an appropriate medium which would clearly differentiate it from other simulating organisms. I have followed Mulsow's[1] technic. For my own work I have slightly modified his method, retaining, however, the basic ingredients of the medium.

The following is the standard medium used in routine work:

Five hundred grams of ground lean beef is infused in 500 cc. of distilled water and allowed to stand in the icebox over night. The following morning, 30 Gm. of agar is dissolved by boiling in 500 cc. of distilled water. The agar is allowed to cool to between 60 and 70 C., and the meat infusion is immediately mixed with the agar. This mixture is again heated until the meat is thoroughly coagulated. It is then filtered through glass wool packed in the stem of a glass funnel. This filtrate will appear slightly cloudy at this time. In the filtrate is dissolved 1 per cent peptone and 0.5 per cent sodium chloride.

The medium is adjusted to p_H 7.6 to 7.8, allowed to cool to 60 C., and the white of an egg thoroughly mixed in. It is next brought to a boil and again filtered through glass wool. If the flask and filtering funnel are placed in an Arnold sterilizer, the filtration is hastened and a crystal clear agar results.

To this medium is added 1 per cent chemically pure levulose (made from inulin), and sufficient 0.5 per cent aqueous bromcresol purple indicator to color the medium a rich purple. The whole is then autoclaved at 5 pounds pressure for forty-five minutes. When the medium has cooled to between 60 and 70 C., 1 part of sterile ascitic fluid, guinea-pig serum or human serum is added to 3 parts of medium, and the plates are poured to a depth of about one-eighth inch. The plates may then be stored in the icebox until ready for use. In inoculating plates, best results will be obtained if straight line streaks are made with a platinum loop, thus preventing confluence of colonies.

In the cover of the petri dish is inserted a piece of common blotting paper saturated with hydrogen peroxide. The plate is then inverted and incubated over night, and the next morning the suspicious colonies are fished and stained by Gram's method.

All colonies exhibiting a zone of yellow (showing acid production from levulose) are disregarded. All colonies showing an opaque whitish luster similar to *Staphylococcus albus* are disregarded. Typical colonies of *Neisseria gonorrhoeae* can be indentified by the low power objective of the microscope, the 9 X eyepiece or even by the naked eye after practice. The colonies in eighteen hours are about the size of a pin head, round, translucent, finely granular, and with a pearly opalescence by transmitted light—the latter characteristic being always striking. The colonies also are mucoid, adhering to the medium, though emulsifying in water fairly easily. On staining, the individual organisms are moderately large, decolorize very quickly in 95 per cent alcohol, and exhibit the typical appearance of small groups and single organisms.

After eighteen or twenty-four hours, the gram stain shows the colony to contain considerable numbers of autolyzed organisms—a very important diagnostic point. Also after this period the individual colonies enlarge to considerable size, and show many supergrowths, radial striations, lobated margin, and concentric "oil drop" appearance. *N. gonorrhoeae* may be distinguished from *Micrococcus catarrhalis* by its failure to grow on common infusion agar and its tendency toward early autolysis.

I have used this technic with marked success for a considerable time and recommend it for its simplicity and unfailing results. It must be borne in mind that plenty of moisture must be present at all times to insure successful cultivation of *N. gonorrhoeae*.

3514 Lucas Avenue.

THE TREATMENT OF ROENTGEN-RAY NAILS

Curran Pope, M.D., Louisville, Ky.

Many roentgen-ray operators suffer from roentgenographers' nails. These usually present a trophic appearance; they are rough, ridged and dirty. The literature to which I have access does not consider their treatment. The method here described has given me excellent results. It requires patience and perseverance. The hands and nails are cleansed with a soft brush and good soap. The hands are bathed in very hot water, then immersed for a few seconds in very cold water, and rubbed dry with a crash towel. The entire hand is anointed with olive oil and the oil is worked into the nails, especially their corners and edges, by means of an orangewood stick. This had best be done in the evening, the surplus oil left on the fingers, and a pair of gloves worn during the night. In the morning the hands should be again cleansed, rubbed with olive oil, and the oil wiped off with a towel. After this treatment has been followed for six or eight weeks, one should consult a good manicurist, explain the condition, and have the nails manicured with great care. The nails should be trimmed, prepared, and finally a glaze put on them. This fills the ridges, closes the pores, prevents them from cracking or breaking, gives a smooth and glistening appearance, and prevents the collection of dirt.

Among the physical measures that may be employed constantly is that of the alternation of hot and cold water, a sort of Scotch douche. This treatment will usually result in a presentable set of nails. Ordinary care and thorough attention given by the manicurist is all that is necessary to keep the nails in excellent condition.

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[1] Dick, G. F., and Dick, Gladys H.: A Skin Test for Susceptibility to Scarlet Fever, J. A. M. A. **82**: 265 (Jan. 26) 1924.

[2] Ferry, N. S., and Fisher, L. W.: Measles Toxin: Its Preparation and Application as a Skin Test, as an Immunizing Agent, and for the Production of an Antitoxin, J. A. M. A. **86**: 932 (March 27) 1926.

[1] Mulsow, F. W.: J. Infect. Dis. **36**: 419 (April) 1925.

Any one who has had roentgen-ray nails and has succeeded in getting the fingers and nails in good condition must continue to take care of them.

115 West Chestnut Street.

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

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(Continued from page 171)

ENDERMIC INJECTION

Endermic injection, or intracutaneous injection, is the introduction of material into the tissue of the skin. Only a very small amount of fluid can be introduced into the derma, and this will have maximum local effect on it. Hence this method is useful for local anesthesia of the skin, and for obtaining skin reactions as in the Schick or the Dick tests, or the pollen extract and other tests for hypersensitiveness.

Absorption after endermic injection is decidedly slower than after any of the other injection methods. It may be so slow that the characteristic systemic effect of the agent might fail to develop. Thus, phlorhizin, 2 mg., injected subcutaneously, produces glycosuria in twenty minutes; injected endermically, it fails to act.[78]

Certain effects, common to all injections, which develop local reactions have been noted:[79] (1) an immediate drop in blood pressure, due to the pain; (2) a red area surrounding the place of injection which is proportional to the painfulness of the injection and to the vasomotor lability of the subject; (3) a diminution in the number of leukocytes in the circulation. All of these effects are, of course, more or less evanescent.

Endermic injection is perhaps best made on the flexor surfaces, where the skin is soft and yielding, as of the forearm. The needle is introduced—bevel side up—into and not through the skin until the bevel has been passed in completely. The test of the success of the procedure is the immediate appearance of a small white elevation (wheal) on injection of one or two drops of fluid.

Endermic Inoculation.—Endermic inoculation is practiced most commonly in connection with vaccination against smallpox as well as with tests for hypersensitiveness, though endermic injection is as good, possibly better. The technic generally used is to sterilize the skin with alcohol, which must then in vaccination be completely removed by liberal douching with sterile water. Permitting any antiseptic material to come in contact with vaccine virus is fatal to the success of the procedure, as it will kill the virus. The surface is then carefully dried with sterile gauze, and scratched with a sharp sterile needle just down to the true skin. There should be no bleeding. The virus, commonly obtained in glass capillaries, is deposited on the spot by breaking off the sealed ends of the tube and expelling its contents on the abraded spot by means of the little rubber bulb furnished with the vaccine. The virus is then rubbed in thoroughly by means of the needle. The site of inoculation is permitted to dry somewhat for a few minutes, covered with a pad of sterile gauze with a hole cut in the center, another to cover it all, and the whole fastened down by a frame of strips of adhesive plaster. Vaccination shields are generally not desirable.

SUBCUTANEOUS INJECTION

Subcutaneous injection, also known as hypodermic administration, is an injection into the loose areolar tissue beneath the skin by means of a hollow needle attached to a small syringe.

In technic it differs from endermic injection in that a fold of the skin is raised with the thumb and index finger of one hand, while the needle is swiftly passed through the skin near the base of the fold and perpendicularly to the raised skin. Though introduced directly into the lymph stream, the agent, if soluble and diffusible, rapidly enters the blood stream by diffusion through the walls of the capillaries. Hence, with such agents, the effect of hypodermic injections can usually be observed within a few minutes. Were the absorption by way of the lymph stream, it would be very much slower. Rubbing or massage after the injection, which might favor absorption by the lymph stream, is probably of little or no importance ordinarily because of the rapidity of absorption through the blood stream. On account of this rapidity and completeness of absorption, the hypodermic dose is generally said to be about one half of the oral dose, though there are many exceptions to this rule. Epinephrine given hypodermically is not absorbed with sufficient rapidity to produce its characteristic effects on the circulation, though its antiasthmatic action may be secured. This is probably due to the fact that it shuts off to a great extent its own absorption by the vasoconstriction it produces. Even when an absorbable agent is administered hypodermically, absorption may be slow in conditions of great depression of the circulation and of lymph stagnation. Remedies should never be injected into a dropsical area. When the circulation is very feeble, as in heart failure, shock, collapse or extreme pain, intravenous injection should be preferred.

In marked contradistinction to the rapidity of absorption of soluble and diffusible bodies, almost insoluble, nondiffusible and colloidal bodies are absorbed very slowly from the subcutaneous tissue. This accounts for the fact that antitoxic serums, subcutaneously administered, do not develop their action for many hours, and that the quite insoluble mercurials, such as mercuric salicylate, produce so much local irritation as to be inapplicable in this way. Such bodies are preferably given intramuscularly.

Hypodermic administration is resorted to when the medicine cannot be swallowed, e. g., on account of unconsciousness; or retained by reason of vomiting or purging; or when greater rapidity of action is needed than could be secured by peroral administration, as in pain, hemorrhage or poisoning; or when the substance is rendered useless by the digestive juices.

The method is not without its restrictions, disadvantages and dangers. Not every medicament can be given hypodermically. The agent must not be severely irritant, acid or alkaline, else it will produce pain, inflammation and even abscess formation, or necrosis. An insoluble substance deposited beneath the skin is liable to produce irritation; hence solutions for subcutaneous injection should be perfectly clear, nearly neutral in reaction, as isotonic [80] with serum as possible, and only those substances may be used that are soluble in water or in some reasonably bland fluid, such as much diluted alcohol, diluted glycerin, saponifiable oil or solutions of mild salts. If the substance requires oil for solution, as camphor, an absorbable oil like almond or olive oil must be chosen. Liquid petrolatum, when used for this purpose, has been known to give rise to tumor formation (paraffinoma). As the bulk of the solution must not be great, the average capacity of hypodermic syringes being 2 cc., nor the solution be concentrated, only very active medicines, given in small doses, are suitable for this purpose, unless it is given with the technic of hypodermic infusion. It must, of course, be sterile.

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* This is the thirtieth of a series of articles on "The Technic of Medication." When completed, the articles will be assembled in book form.

[78] Rajka, Edmund: Klinisch-experimentelle Grundlagen einer intracutanen Therapie, Klin. Wchnschr. 3:1027 (June 3) 1924.

[79] Levai, Michael: Klinisch-experimentelle Grundlagen einer intracutanen Therapie, Klin. Wchnschr. 3:447 (March 11) 1924.

Hypodermic injections are generally given on the outer surface of the arm. As the outer aspect of the thigh is still less sensitive, it should be more frequently resorted to than it is. It should be the place of election in women suffering from severe infections with bacteremia, as in such cases abscesses are liable to develop even at the site of injection of nonirritating drugs; and these often leave disfiguring scars on healing. The thigh is the most convenient place for self-administration of hypodermic injections, as it permits the use of both hands. If the solution is nonirritating and deposited in loose tissue, it will generally not produce much pain. Irritating injections may be very painful, and even lead to destruction of tissue. Addition of a local anesthetic, as 1 to 2 per cent solution of procaine hydrochloride, to the solution of irritative substances lessens not only pain but also the inflammatory reaction. To add epinephrine would be a mistake, as it lessens the rapidity of absorption, and hence increases local destructive action. Indeed, epinephrine itself, injected subcutaneously in rather strong solution, may produce necrosis which is ascribed to prolonged vascular spasm and consequent impairment of nutrition. When it is desired to increase the rapidity of absorption and lessen pain following an injection, hot applications may be employed with advantage. Painting tincture of iodine over the site of injection is believed to lessen the liability of local injury following the procedure. It possibly does this by producing hyperemia and increasing the rate of absorption. Should a lessening of the rapidity of absorption be aimed at, as when an excessive dose has been given, cold application, injection of epinephrine solution and—if the danger warrants it—temporary interruption of the circulation by an Esmarch bandage should be resorted to. If an irritating injection cannot be avoided, it should be given "deep," that is, intramuscularly, or intravenously for reasons previously stated. Injections into the vicinity of nerves must be avoided, as they are liable to lead to more or less disabling neuritis.

Another disadvantage of these injections is that, unless there is a trained nurse in attendance, the physician himself must generally administer the dose, which is often a great inconvenience to both patient and physician. As a rule, the patient or his relatives are not entrusted with the administration of hypodermic injections. Especially important is this injunction in case of morphine, as there is great danger of the establishment of the morphine habit in a particularly vicious and enslaving form. However, it sometimes becomes necessary to instruct the patient in the use of the injection needle, as for the administration of insulin in diabetes, or of epinephrine in asthma; and this can be safely done with even moderately intelligent persons.

The dangers from hypodermic injection are (1) injection into a vein, and (2) infection. Injection into a vein, which would carry the entire dose at once to the vital centers, giving a suddenness and severity of action that may not be desired, is avoided by injecting into a part not well supplied with veins, such as the extensor surface of the arm or thigh; and, of course, by not injecting in the vicinity of visible veins.

The second danger, infection, with all its possibilities of abscess formation, loss of limb or even loss of life, can be avoided by surgical cleanliness. Hence the solution, the syringe and the part in which the injection is made must be sterile. How this is attended to has been previously discussed.

Subcutaneous Infusion.—This procedure, also known as hypodermoclysis, is the injection of large quantities of fluid into the subcutaneous tissues, and performed on the same principles and with the same precautions as the small subcutaneous injection, the procedure differing only in the use of a large needle and a larger apparatus (an irrigator), and 3 feet of rubber tubing. It should be given slowly, from fifteen to thirty minutes being required for the introduction of 500 cc. Usually from 800 to 1,200 cc. is infused during one injection, though a much larger amount can be given. The injection is best made at a point near the outer border of the pectoral muscles, midway between the nipple and the head of the humerus. Here absorption is almost twice as fast as it is when the injection is under the breast alone; but the large loose subcutaneous tissue areas of any other part of the body may be utilized. The fluid most commonly employed is 0.9 per cent salt solution; but half strength physiologic sodium chloride solution is probably more thirst quenching and not much more irritative. Willard Bartlett [81] employs for this purpose plain freshly distilled water, as harmful effects occasionally follow the absorption of very large amounts of sodium chloride. The fluid is heated to between 100 and 110 F., not higher, as there is danger of necrosis from injections of fluid at too high a temperature. As a certain amount of soreness of the injected area follows, and children usually resent this greatly, the intraperitoneal route is preferable for them.

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[80] V. Itallie (Pharm. Weekbl., abstr. J. Am. Pharm. A., November, 1919, p. 984) advises the following combinations to render alkaloidal solutions isotonic with human blood serum, thus lessening pain and irritation:

A 1 per cent morphine hydrochloride solution requires the addition of 0.76 per cent of sodium chloride.

A 1.5 per cent morphine hydrochloride solution, the addition of 0.69 per cent of sodium chloride.

A 2 per cent morphine hydrochloride solution, 0.62 per cent of sodium chloride.

A 3 per cent morphine hydrochloride solution, 0.48 per cent of sodium chloride.

A 1 per cent cocaine hydrochloride solution requires the addition of 0.74 per cent of sodium chloride.

A 6 per cent cocaine hydrochloride solution does not require any addition of sodium chloride.

A 1 per cent procaine hydrochloride solution requires the addition of 0.69 per cent of sodium chloride.

A 2 per cent procaine hydrochloride solution, 0.51 per cent of sodium chloride.

A 1 per cent atropine sulphate solution requires the addition of 0.79 per cent of sodium chloride.

A 1 per cent emetine hydrochloride solution requires the addition of 0.82 per cent of sodium chloride.

A 3 per cent emetine hydrochloride solution, 0.68 per cent of sodium chloride.

A 5 per cent emetine hydrochloride solution, 0.45 per cent of sodium chloride.

[81] Bartlett, Willard: Hypodermoclysis, abstr. J. A. M. A. 74:157 (Jan. 17) 1920.

Hypodermoclysis may be given more or less continuously by means of the visible dropper and screw clamp arrangement.

Subcutaneous Oil Injection.—Subcutaneous alimentation has thus far not been successful. It is true that 5 per cent dextrose solution may be injected in quantities of 500 cc. from two to four times daily. The 50 to 100 Gm. of sugar thus introduced would yield from 200 to 400 calories; but even this amount can usually not be introduced for more than two or three days, as the patients then refuse further injection on account of a sore feeling in the tissue repeatedly used for this purpose. Subcutaneous injections of olive oil were advocated by von Leube in 1895 as a means of nourishing a patient who for any reason is unable to take fat in the normal manner. As such injections are well borne, and very little fat is absorbed on inunction or rectal injection, it was hoped that this method might constitute an important adjunct to other forms of extrabuccal alimentation. Unfortunately, absorption from plain oil injected in absolute starvation is so very slow that it can be of no value in the nutritional emergencies in which it might seem desirable. H. Winternitz, in 1903, found that in such cases the absorption occurred at the rate of only from 1 to 3 Gm. daily.

The experiments of Mills[82] on starving and fed cats not only confirm these observations but also furnish the key to an understanding of the reason for the extremely slow absorption of injected oil in absolute starvation, and a promise for the ultimate solution of the problem of subcutaneous oil administration. In starvation, plain oil is not absorbed to any great extent because lypolytic ferment, along with other ferments, becomes progressively reduced as starvation increases. In well fed animals, absorption of oil is slow but much better than in the starved animal. Properly emulsified oil, on the other hand, is absorbed, even in the starved animal, sufficiently well to supply almost half of the required calories. As acacia emulsions were found unsatisfactory (necrosis even may be produced by them) Mills employed lecithin as the emulsifying agent, and suggests the employment of emulsions thus prepared in many diseases. He found that corn oil and cod liver oil produced intense and long-continued inflammation, while oil of lard, coconut oil, peanut, cottonseed, olive and sesame oil produced no irritation. Lard, butter-fat and human oils were also used. The author is under the impression that animal oils are more readily absorbed than vegetable oils.

Leon Binet[83] also points out the slow rate at which oil is absorbed. It may remain in situ for weeks and months, as can be shown by the persistence of spots of injected iodized oil, impenetrable to the roentgen rays. He finds that some animal oils are absorbed much more readily than vegetable oils. Injected oils spread out through the lymph spaces, reaching the interstices in the muscles, where they are divided into droplets, which may become almost encysted. The digestion of the oils seems to be the work of leukocytes, mononuclears chiefly, which, as Fiessinger has shown, are capable of secreting an active lipase. Volatile bodies, such as camphor, may be absorbed independently of the oil. Half of the injected camphor was absorbed in two hours, 75 per cent after five hours, and almost all the camphor after nine hours, while the olive oil remained in situ for months.

Nonvolatile oil soluble bodies injected in oil solution must, of course, be absorbed much more slowly. To what extent emulsification, as by lecithin, would aid such absorption does not seem to have thus far been determined.

In view of this slow absorption of oil, the suggestion of Miller[84] is of interest, to establish a local subcutaneous depot of epinephrine in oil for such clinical conditions as bronchial asthma, certain urticarial eruptions, and in certain types of pneumonia [and why not in Addison's disease?] to secure in this manner rather continuous epinephrinization by repeating the injection every eight to twelve hours. By the use of procaine in oil he has succeeded in maintaining local anesthesia for from ten to twelve hours.

The danger of injection abscesses from oil injections will have to be borne in mind. According to Budai,[85] such injection abscesses, which so often occur in infectious diseases with circulatory disturbance, such as grip, scarlet fever or typhoid, are the result of the pressure of oil on the undernourished tissue with its toxically injured capillaries. Intramuscular injection of oil would seem preferable to its subcutaneous administration, as the muscle has a much better blood supply.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

PITUITARY LIQUID (SURGICAL)-ARMOUR. — A slightly acid aqueous solution containing the water-soluble principle or principles of the fresh posterior lobe of the pituitary body of cattle, free from preservative. It is standardized by the method of the U. S. Pharmacopeia to have twice the strength of solution of pituitary, U. S. P. X.

Actions and Uses.—See Pituitary Gland, New and Nonofficial Remedies, 1926, p. 281.

Dosage.—See Solution of Pituitary, New and Nonofficial Remedies, 1926, p. 283.

Manufactured by Armour & Company, Chicago. No U. S. patent or trademark.

Ampules Pituitary Liquid (Surgical)-Armour 1 cc.

TETBROTHALEIN SODIUM (Formerly called Tetrabromophthalein Sodium; see New and Nonofficial Remedies, 1926, p. 162).

Tetrabromophenolphthalein Sodium Salt-Eastman.—A brand of tetbrothalein sodium-N. N. R.

Manufactured by the Eastman Kodak Company, Rochester, N. Y. No U. S. patent or trademark.

TETIOTHALEIN SODIUM (Formerly called Tetraiodophthalein Sodium; see New and Nonofficial Remedies, 1926, p. 163).

Tetraiodophenolphthalein Sodium Salt-Eastman.—A brand of tetiothalein sodium-N. N. R.

Manufactured by the Eastman Kodak Company, Rochester, N. Y. No U. S. patent or trademark.

Gas Masks and Hard Work.—A man wearing a gas mask can work hard for only about half an hour, when, on account of the extra exertion caused by the resistance to breathing, he must stop to rest or greatly reduce his exertion.—Tests and Characteristics of Dust Respirators, U. S. Department of Commerce.

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[82] Mills, L. H.: The Utilization of Fats and Oils Given Subcutaneously, Arch. Int. Med. 7:694 (May) 1911.

[83] Binet, Leon, Paris Letter, J. A. M. A. 86:49 (Jan. 2) 1926.

[84] Miller, H. R.: The Use of Drugs in Oil, J. A. M. A. 74:1270 (May 1) 1920.

[85] Budai, Stefan: Therapie d. Gegenw., 1922, No. 9.

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SATURDAY, JULY 24, 1926

ASTHMA IN CHILDREN

Asthma is not difficult to diagnose, but effective treatment has for the most part remained somewhat problematic and haphazard. An advance in our knowledge of the disorder has resulted from the recognition that a considerable number of persons subject to a recurring dyspnea that is more marked in expiration associated with wheezing are hypersensitive to protein. The importance of the allergic factors no longer requires debate; in fact, there are clinicians who would restrict the term asthma to patients in whom evidences of protein sensitization can be elicited. Peshkin[1] has recently warned against taking any narrow view of the possible genesis of asthma. He points out that the various etiologic protein sensitizations are merely exciting factors and not the basic cause of asthma. What disturbed mechanism is primarily responsible for the varied manifestations of allergy in the human being is still unknown. Until such a mechanism is brought to light, we must, as Peshkin remarks, content ourselves with the present method of eliciting the various exciting factors in asthma. Therefore, to fix the responsibility in asthma requires a complete series of protein skin tests accurately performed and properly interpreted, together with a thorough history, physical examination and careful study of the case, extending over a considerable period.

A careful study[1] of 100 consecutive cases of asthma, each studied over a period of many months in the Children's Asthma Clinic of Mount Sinai Hospital, New York, has demonstrated that about four fifths of these youthful patients were protein sensitive in specifically demonstrable ways. The most common age of onset of asthma in the protein sensitive group was 2 years. Onset of asthma after 10 years did not occur. The most common onset in the nonprotein sensitive group was around 1 year (27 per cent), and after that it was fairly evenly distributed up to the ninth year, after which no cases occurred. It might be argued that many children are protein sensitive regardless of the occurrence of asthma in them; but the proportion of such children is at most small by comparison with the figures of Peshkin.

Nearly all the protein sensitive asthmatic patients reacted to "inhalants," the most common of which, in the order of their frequency, were rabbit hair, house dust, duck feathers, horse dander, cat hair and ragweed. Sensitization to rabbit hair occurred in 49 per cent of all asthmatic children, or in 62 per cent of the protein sensitive group. This is a matter of great practical importance in view of the extensive use of rabbit hair in pillows and mattresses. However, articles of apparel trimmed with rabbit hair, and felt hats, fur coats and toy animals are additional sources of exposure.[2]

It is significant that intolerance to drugs was not observed in Peshkin's cases of asthma. For a long time, interest in protein sensitization was centered in the food proteins as sources of the harm. According to these studies, the rôle of food in the production of allergic symptoms in children is extremely variable, and food does not attain the importance of the inhalant proteins. The influx of new preparations of "diagnostic proteins" in the field of pharmaceutic supplies carries with it the danger of distribution of poor products. Unsatisfactory results are likely to follow the use of nonpotent diagnostic materials that have not been properly tested. As Peshkin notes, the clinical significance of the protein skin reactions is far from a closed chapter. After all, they are of value only when they lead to direct clinical results. There are many workers, he adds, who consider the present status of the question eminently satisfactory, and almost a complete science. Then, again, there are far too many others, clinicians of repute, who still view the entire subject with skepticism. The existence of too many discrepancies in the interpretation of the reactions has led to more or less indifferent results, and is largely responsible for the controversial situation.

CLASSIFICATION OF MERCURIALS

Elsewhere in this issue appears the report of an investigation on "A Method of Laboratory Evaluation and Classification of Mercurials," conducted in the Chemical Laboratory of the Association by J. B. Peterson.[3] This work at first glance appears to concern a purely academic problem; in fact, however, it helps to throw light on questions of clinical interest. An increasing number of mercury compounds have been introduced into medicine with the hope that they might be especially adapted to some particular purpose. One of the most important factors that govern these adaptations is the degree of their ionization, for this has an important bearing on their precipitant action on protein, and therefore their local irritant action. To a large extent and in most cases it also controls their antiseptic action. In other words, these important properties depend largely on the degree of ionization of the mercury; and if this could be conveniently determined, the local irritant and direct antiseptic actions could in general be foretold. Furthermore, if there were a conspicuous anomaly between the ionized mercury content of a solution and this antiseptic activity, it would mean that the potency must be due to some other cause than mercury ions—a matter that is also of clinical importance. Evidently the determination of the mercury ions in such solutions would be of real value. The problem is not a simple one. A rough idea may be gained from the degree of blackening of the solution by hydrogen sulphide, and by "poisoning" of the hydrogen electrodes, since these both depend on mercury ions; but it is difficult to make such comparisons quantitative.

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[1] Peshkin, M. M.: Asthma in Children, I, Etiology, Am. J. Dis. Child. **31**: 763 (June) 1926.

[2] Sensitivity to rabbit hairs is discussed by Vander Veer, A., Jr.: The Present Status of the Treatment of Hay-Fever and Asthma, Am. J. M. Sc. **164**: 97 (July) 1922. Ratner, Bret: Rabbit Hair Asthma in Children, M. Clin. N. Amer. **5**: 1129 (Jan.) 1922; Am. J. Dis. Child. **24**: 346 (Oct.) 1922.

[3] Peterson, J. B.: Mercurials: A Proposed Method of Laboratory Evaluation and Classification, this issue, p. 223.

Problems similar to those mentioned had existed in relation to the ionization of silver preparations, but Dreser[4] showed that the metallic ionization could be estimated conveniently by the toxic effects on yeast cultures. Pilcher and Sollmann[5] adapted this method in a remarkable manner to the classification of the silver protein compounds. The method in addition yielded data that helped to explain why these preparations are active,[6] and how active they are under conditions approaching clinical application.[7] The experiments also shed light on the keeping power of the solutions of the silver protein preparations.[8] The method is so simple that manufacturers of silver protein preparations readily adopted it as a reliable means of control work. Although in use only a relatively short time, its value was recognized by incorporation in the U. S. P. X as a test to classify mild (argyrol type) and strong (protargol type) silver protein preparations.

Encouraged by the researches of Sollmann and Pilcher, Peterson applied the same method to the series of mercury compounds, and found it equally applicable. The results are quite in harmony with the chemical and physical data, and with the clinical data, so far as they are known, with the advantage that the yeast method is more objective and more quantitative. According to these results, commonly used mercury compounds fall into four distinct classes from the standpoint of ionization. Expressing this simply in terms of "efficiency for equivalent of mercury," with mercuric chloride as unity, the first class comprises the relatively freely ionized mercuric salts mercuric bromide and chloride, mercuric potassium iodide, mercuric succinimide, sublamine and metaphen, decreasing in this order from 1.7 units to 0.36 unit; the correspondence of this sequence to the clinical effects—local, irritant and antiseptic—is evident. In the second class come the feebly ionizable compounds with correspondingly mild irritation. They include mercuric oxycyanide, cyanide and benzoate, and meroxyl, and range from 0.056 to 0.03 unit. The third group includes mercurosal and the mercury-fluorescein dyes mercurochrome and flumerin. These range from 0.02 to 0.01 unit; but the dye component appears to be responsible for a considerable part of the activity—fully a fifth, in the case of flumerin. This factor is perhaps too much overlooked. In the fourth class come afridol, which does not ionize enough, and mercuric salicylate, which does not dissolve sufficiently to affect the yeast sensibly. It is clear that the method has proved useful for classifying and grading the mercury compounds on the basis of their ionization, and so furnishes an objective measure of their local irritant, precipitant and antiseptic action. Inventors of such compounds may estimate these therapeutic actions in the test tube, before they apply and check them on patients. It will be interesting to see whether the method may prove equally efficient for approaching the other practical problems which it solved for the silver compounds in the hands of Pilcher and Sollmann; namely, the degree of interference of proteins and cells with the ionic mercury action, and the changes that the solutions undergo on keeping.

SUBCUTANEOUS FAT IN SCLEREMA

In mammals, adipose tissue forms the chief store of reserve fat, the latter sometimes making up nine tenths of the organic substance present. There are varied reasons why it is of interest to man. For many persons the cosmetic aspects governed by the location and extent of their adipose tissue are of foremost concern. Again, the fatty layers act as a warm blanket that may modify the heat regulation in the body, or the mere weight of a superabundance of fat may afford concern to those who are compelled to carry it. Whereas in some species the accumulation of fat represents a beneficent reserve of fuel for insurance against a day of need, this aspect of the subject rarely appeals to man, who today is rarely bereft of food supply for any prolonged period.

The composition of the adipose tissue fat varies even in the same animal. It is common knowledge that the fat which lies just under the skin tends to have a lower melting point than that found more internally. Recent reviewers[1] of the subject believe that there are grounds for attributing the well marked differences in the composition of adipose tissue fat to the fact that it is deposited in regions of different temperature. It is generally held that the cells of adipose tissue do not synthesize from substances, such as protein or carbohydrate, the fat which they store up, but rather that they take up this fat from the blood stream. In what form it is taken up, whether as neutral fat, fatty acid or soap, is uncertain, but the process seems to be one that favors the storage at lower temperatures of the more unsaturated fats. It would be mere speculation, Leathes and Raper state, to suggest any physical or chemical cause for this phenomenon, but it appears to be an example of the process of adaptation which might well have such a basis.

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[4] Dreser, H.: Ztschr. f. exper. Path. u. Therap. **19**: 3, 1917.

[5] Pilcher, J. D., and Sollmann, Torald: J. Lab. & Clin. Med. **8**: 301 (Feb.) 1923.

[6] Pilcher, J. D., and Sollmann, Torald: J. Lab. & Clin. Med. **10**: 38 (Oct.) 1924.

[7] Pilcher, J. D., and Sollmann, Torald: J. Lab. & Clin. Med. **9**: 256 (Jan.) 1924.

[8] Pilcher, J. D., and Sollmann, Torald: J. Lab. & Clin. Med. **10**: 103 (Nov.) 1924.

[1] Leathes, J. B., and Raper, H. S.: The Fats, London, Longmans, Green & Co., 1925.

In his recent study of human subcutaneous fat, Eckstein[2] of the University of Michigan brings added confirmation of the similarity between this fat and that of the blood and feces. The chemical resemblance of fecal fat to the blood lipoids has repeatedly been stressed of late, notably by Bloor of the University of Rochester. This has been made the basis for the contention that, for the most part, fecal fat represents an excretion from the organism itself rather than an evacuation of unabsorbed food fats.[3] All these newer views help to elucidate the pathology of adipose tissue that is seen in certain well defined human cases, notably sclerematous infants. Sclerema neonatorum is a rare but interesting condition characterized by the appearance of hard, well defined thickenings of the subcutaneous tissue. At one time it was assumed that the peculiar changes in the fat were attributable to an overabundance of cholesterol or its esters. Investigations in London by Channon and Harrison[4] seem to demonstrate that the subcutaneous fat in sclerematous infants has a higher melting point and a slightly lower iodine value than the corresponding values of the fat in infants of the same age. The raised melting point is believed to be due to the presence of an excess of glycerides of the higher fatty acids—probably of palmitic acid—which causes a slight decrease in the oleic acid content of the fat. Subcutaneous tissue in cases of sclerema contains an abnormal amount of cholesterol, calcium and phosphorus. The causes of these now well authenticated chemical perversions in subcutaneous fat deposition remain to be ascertained. In this connection it may be of interest to refer to the significant characteristics that Eckstein and Wile[5] have lately recorded for the outer layers of the skin. Cholesterol makes up on the average approximately one fifth of the total lipoids, whereas in the subcutaneous fat it amounts to only about one one-hundredth of that amount.[2] The pronounced difference between the lipoid make-up of the skin and that of the tissues immediately beneath it challenges attention.

Current Comment

THE PATHOGENESIS OF HYPERTENSION—A NEW THEORY

The immediate causes of arterial hypertension are still sufficiently uncertain to warrant a lively interest in any engaging new hypothesis. Studies on the pathogenesis of hypertension, carried out by Bordley and Baker[1] in the department of pathology of Johns Hopkins Hospital, have been stimulated by the demonstration of Anrep and Starling[2] of London that a reduction in the amount of blood reaching the part of the brain concerned with vasomotor control brings about a compensatory rise in the systemic arterial pressure. This was effected by the ingenious experiment of making the circulation through the brachiocephalic artery of an experimental animal independent of the rest of the blood supply of the body. The circulation through the medullary vascular centers could thus be controlled and made independent of changes in the heart or in the splanchnic vessels. A fall in the blood pressure in the brain produced immediate vasoconstriction in the rest of the animal. Bordley and Baker have found arteriosclerosis in the medulla oblongata without exception in man in cases with a history of hypertension, whereas the arterioles in this region were found unaltered when there was a record of normal blood pressure. The Baltimore pathologists, recognizing the current belief that arterial hypertension is accompanied by arteriosclerosis in at least some portion of the body, suggest that a localization of this process in the medulla oblongata may be the essential factor in the production of persistent high blood pressure. The possibility remains, of course, that the anatomic changes may be secondary to the hypertension. Bordley and Baker tentatively conclude that there is at least an association between persistent hypertension and arteriosclerosis of the vessels supplying the brain stem.

THE CURABILITY OF DIABETES

The discovery of insulin and the unmistakable clinical benefit that has attended its use have awakened the hope that a "cure" of the disease is at hand. For various reasons it is unfortunate that this impression has gained such widespread credence. Erroneous information about medical subjects invariably reacts badly on the work of a profession often consequently charged with errors for which it is not responsible and which it has never countenanced. Furthermore, there are many occasions on which a physician has been obliged to disillusion some unfortunate sufferer. One of the foremost American students of diabetes[3] frankly admits his unwillingness to regard any of his diabetic patients as "cured." He remarks that the term "arrested" instead of "cured" has found general

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[2] Eckstein, H. C.: The Fatty Acids in the Subcutaneous Fat of Man, J. Biol. Chem. **64**: 797 (July) 1925.

[3] The Origin of Fecal Fat, Current Comment, J. A. M. A. **87**: 176 (July 17) 1926.

[4] Channon, H. J., and Harrison, G. A.: The Chemical Nature of the Subcutaneous Fat in the Normal and Sclerematous Infant, Biochem. J. **20**: 84, 1926.

[5] Eckstein, H. C., and Wile, U. J.: The Cholesterol Content of the Cutaneous Epithelium of Man, J. Biol. Chem. **67**: 54 (Feb.) 1926.

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[1] Bordley, J., and Baker, B. M.: A Consideration of Arteriosclerosis of the Cerebral Vessels and the Pathogenesis of Hypertension, Bull. Johns Hopkins Hosp. **38**: 320 (April) 1926.

[2] Anrep, G. V., and Starling, E. H.: Central and Reflex Regulation on the Circulation, Proc. Roy. Soc. London, B **97**: 463, 1925.

[3] Joslin, E. P.: The Treatment of Diabetes Mellitus, Philadelphia, Lea & Febiger, 1923.

acceptance in the literature of tuberculosis, and it is equally appropriate in diabetes. Some clinicians of wide experience believe that a diabetic patient may recover; but a sugar-free urine and a normal blood sugar content are not the sole indexes of a cure; both should be normal for years. Those who believe that it is better for the present to take the conservative standpoint and be slow to report cured or even arrested cases will find support in the recent observations of Harrison[4] in London. He has directed his attention to the possibility of partial cure that might be ascribed to the action of insulin. His patients were placed on a constant daily intake of carbohydrate, protein, fat and calories, the dose of the hormone being adjusted to keep the blood sugar content within normal limits. There was no indication of even a partial remission of the disease as the result of observations lasting from eleven to eighteen months in a few selected cases. All needed as much or more insulin at the end of the study as at its beginning. Barely four years has elapsed since the use of insulin came into general vogue in clinical practice. It has revolutionized the treatment of diabetes in more ways than one. It has increased rather than diminished the need for careful regard to the diet, even though the restrictions of the latter are no longer as rigid as formerly. The time has not yet arrived, however, to foster the belief of a curative control over one of the most perplexing of human chronic diseases.

SPECULATIONS ABOUT PERNICIOUS ANEMIA

Pernicious anemia is one of the diseases that seem to awaken perennial interest. The malady is by no means rare; the question of its causation is apparently far from solution, despite the multiplicity of theories that have been advanced; and there is what a distinguished clinician has described as the ever more disheartening results of treatment. Such a recital is in itself sufficient to excite the attention of keen students; it also serves alike as a sufficient apology for new attempts at interpretation and as a warning of the necessity of the utmost circumspection in the presentation of a new hypothesis. Heredity, infection, intestinal atrophy, defective absorption of nutriment, improper "assimilation"—these and other alleged causes of pernicious anemia have had a hearing and been for the most part abandoned as inadequate to explain all the known facts. The Danish clinician Knud Faber,[5] in an address before the American Congress of Internal Medicine at Detroit in February, reverted to the view that pernicious anemia has its origin in intestinal intoxication. Pointing to the association of the disease with many cases of achylia gastrica, he argued that this condition gives rise to various possibilities of the formation and absorption of hemolytic substances in the bowel, owing to the transformation of the normal intestinal flora through lack of the usual gastric germicidal processes. Either the bacteria themselves or toxins may consequently be taken into the blood stream. In other words, achylia gastrica distinctly favors intestinal intoxication processes. When pernicious anemia develops in the course of acute sepsis, the production of the "poison" may be looked for elsewhere than in the intestine. Of course, such speculations bring us little nearer to the nature of the hypothetic hemolytic agent so generally postulated. The conception advanced gains, we think, if to it is added the suggested possibility that with protracted hemolysis from any cause the hematogenic organs give out. Wells has ventured the further suggestion that this exhaustion may perhaps be hastened by the influence of the toxic substances in the blood, hematogenesis then becoming insufficient to replace the lost corpuscles.

TEMPERATURE AND PROTEIN INTAKE

The "heated term," as the summer season in the United States is sometimes designated, is likely to awaken reflections on the endogenous sources of heat in the body as well as regarding the environmental sources of discomfort revealed alike by the thermometer and by our sensations of warmth. It is commonly stated that protein has one property out of all proportion to that possessed by other foodstuffs: it largely increases the production of heat in the body.[1] In commenting on this some time ago,[2] we referred to observations made in New Orleans by Denis and Borgstrom[3] on the protein metabolism of Southern medical students, in contrast with their colleagues in colder New England. The daily urinary nitrogen output for the latter was estimated at from 15 to 18 Gm. daily, in contrast to 10.6 Gm. observed for the New Orleans students. The suggestion was made by Denis and Borgstrom that such a lowered protein intake may be due to the warm climate in which these subjects were living, as it was noted that the average nitrogen of the urines collected during the cold weather of February and March was noticeably higher than in those collected during April and July. The results obtained were assumed to furnish evidence in favor of the view that increase of temperature is accompanied by a decrease in protein intake, and that, apart from the variations due to seasonal changes, the inhabitants of the semitropical portions of this country probably consume an amount of protein considerably below the quantity reported as the average intake for the nation. Exception has recently been taken by Youngburg and Finch[4] of the University of Buffalo Department of Medicine to the alleged facts and the consequent conclusions.[5] In their observations on persons in New England and western New York, the average total daily urinary nitrogen output for a 70 Kg. man was 11.3 Gm., a figure not at variance with the Southern data. According to the Buffalo biochemists, seasonal variations in temperature in temperate zones are not great enough to influence the level of protein metabolism in man; it is the same in summer as in winter. The difference in protein metabolism between inhabitants of temperate zones and of semitropical zones is small at most. Variations in protein intake are probably far more dependent on factors other than temperature changes in the environment; at any rate, the data at present available are still too scanty to justify pragmatic conclusions of adaptation.

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[4] Harrison, G. A.: Can Insulin Produce Even a Partial Cure in Human Diabetes? Quart. J. Med. **19**: 223 (Jan.) 1926.

[5] Faber, Knud: The Intestinal Origin of Pernicious Anemia, Ann. Clin. Med. **4**: 783 (April) 1926.

[1] Lusk, Graham: The Fundamental Basis of Nutrition, New Haven, Yale University Press, 1923.

[2] Temperature and Protein Intake, editorial, J. A. M. A. **83**: 1432 (Nov. 1) 1924.

[3] Denis, W., and Borgstrom, P.: A Study of the Effect of Temperature on Protein Intake, J. Biol. Chem. **61**: 109 (Aug.) 1924.

[4] Youngburg, G. E., and Finch, M. W.: The Effect of Temperature on Metabolism, Particularly That of Protein, J. Biol. Chem. **68**: 335 (May) 1926.

[5] The literature is reviewed by Greenwald, I.: A Normal Diet, in Barker, L. F.: Endocrinology and Metabolism, New York, **3**: 385, 1922.

Association News

THE WASHINGTON SESSION

Hotel Reservations

Dr. John Allan Talbott, 1621 Connecticut Avenue N.W., Washington, D. C., is the chairman of the Committee on Hotels of the Local Committee of Arrangements for the 1927 Annual Session, to be held in Washington, D. C., May 16-20. Reservations for rooms are already being made. Dr. Talbott will be glad to do what he can to help members and Fellows of the Association to secure satisfactory hotel accommodations for the time of the session.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Polansky and "Dr." Swank.—The Pima County Medical Society recently undertook an investigation of two tuberculosis "cures" which were being exploited in that county, one by a man named Polansky, the other by "Dr." W. A. Swank, a veterinarian. When Polansky's case came up in the superior court, he agreed, says *Southwestern Medicine,* to leave the state immediately and not to attempt to practice medicine in Arizona again. "Dr." Swank forfeited his bond and left the community.

COLORADO

Personal.—Dr. Bertrand B. Jaffa has been appointed assistant superintendent of the Denver General Hospital, succeeding Dr. Ethel D. Humphrys, resigned.——Dr. Henry Sewall, emeritus professor of medicine, University of Colorado School of Medicine, Denver, received the honorary degree of doctor of science, recently, from Wesleyan University.

Community Health Conference.—Under the auspices of the University of Colorado Extension Division, the state board of health, the state tuberculosis association, the state dental association and other organizations, a community health conference was held at Alamosa, July 12; children under 7 years of age were given physical examinations on request of the parents, and lectures were given by Dr. Gerrit Heusinkveld on "Prenatal Influences," and by Dr. Franklin G. Ebaugh on "Mental Hygiene and Habit Training."

CONNECTICUT

Health at New Haven.—Telegraphic reports to the department of commerce from sixty-five cities with a total population of about 29,000,000 for the week ending May 29 indicate that the highest mortality rate (23.2) was for New Haven, and that the rate for the group of cities was 12.7. The mortality rate for New Haven for the corresponding period last year was 7.3, and, for the group of cities, 12.4.

Tetanus in July.—During the last eight years there have been 131 cases of tetanus and 128 deaths in Connecticut. A summary prepared by the state department of health shows that more cases occurred in July than in any other month, and this is attributed to Fourth of July accidents. While the largest number of cases for any one year was reported in 1922, the decrease since then has been less than would be expected in view of the campaign for a sane Fourth of July. There were eighteen cases of tetanus in 1925; only five of them, however, occurred in July.

ILLINOIS

Society News.—Dr. Albert F. Storke has been elected president of the Oak Park Physicians Club to succeed Dr. Anna E. Blount; Dr. Hugh T. Patrick, Chicago, recently addressed the club on "The Expert Witness."——Dr. Frank P. Norbury, Jacksonville, addressed the Decatur Medical Society, recently, on "Epidemic Encephalitis."

Appointments at State University.—Frederick B. Noyes, D.D.S., professor and head of the department of orthodontia, has been appointed dean of the College of Dentistry of the University of Illinois to succeed Dr. Frederick B. Moorehead, resigned; Dr. Frederick W. Maroney, former director, department of health instruction of public schools, Atlantic City, N. J., has been appointed associate professor of physical education, and Edward A. Boyden, Ph.D., associate professor of anatomy.

Chicago

Hourly Nursing Service.—There has been established throughout the city a new type of nursing service to meet the demand for skilled care of the sick in homes where a nurse is not required full time. A nurse may now be engaged in Chicago by the hour between 8:30 a. m. and 10 p. m. at $2 for the first hour or fraction thereof, and $1 for the second hour or fraction thereof, the service being limited to three hours per visit. The Central Council for Nursing Education and the First District of the Illinois State Association of Graduate Nurses organized the service; calls should be made to the Chicago Nurses Club and Registry, 116 South Michigan Avenue, telephone, State 8542.

Chicago Medical Society.—In the annual report of the secretary, it appears that the Chicago Medical Society now has a membership of more than 4,000, and is the largest local medical society in the world. During the last year, the central society conducted twenty-five meetings, which were addressed by eighteen out-of-town guests in addition to members of the society. The council of the society held nine meetings, and the board of trustees, eight, during the year. A campaign was carried on in every branch of the society for new members; seventy-eight members were dropped during the year for nonpayment of dues, the smallest number in several years; twenty-six transfers were issued to other county societies, and forty-nine of the members died.

Postgraduate Clinics at County Hospital.—The first four weeks' course of summer clinics at Cook County Hospital, conducted under the auspices of the Chicago Medical Society, was officially opened, July 19, by Mr. Anton J. Cermak, president of the county board, who welcomed about 300 visiting physicians, among whom are ten women. The class in the wards was divided into groups of fifteen each; there followed a pathologic conference of the whole group in the amphitheater and a symposium Tuesday evening on goiter by Drs. Frederick Tice, Edward S. Blaine and Raymond W. McNealy, and on Friday evening a symposium on gastric and duodenal ulcer by Drs. William A. Brams and Karl A. Meyer; about sixty physicians on the staff of the hospital will assist in the instruction.

LOUISIANA

Dermatologists Organize.—The Louisiana Dermatological Society was organized, May 24, at a meeting at Touro Infirmary, New Orleans, with Dr. Henry E. Menage, New Orleans, president, and Dr. Thomas A. Maxwell, 1119 Union Indemnity Building, New Orleans, secretary. Any dermatologist in the state affiliated with his local medical society and the American Medical Association is eligible for membership.

University News.—Tulane University will erect a downtown department of the medical school at Howard Street and Tulane Avenue, adjoining Charity Hospital, which will be known as the Hutchinson Memorial, with which the new clinic will closely cooperate. Although no definite plans for the building have been made, the site has been purchased and construction will begin as soon as sufficient funds are available. Mr. A. C. Hutchinson gave the university an endowment of about $780,000 in memory of his wife to promote medical science.

MARYLAND

Hospital News.—The new administration building of the Eastern Shore State Hospital, Cambridge, was dedicated, June 18; Dr. Arthur P. Herring, Baltimore, was chairman at the ceremonies; the speakers included Governor Ritchie, former Governor Harrington and Dr. Hugh H. Young.

Cancer Mass Meeting.—The state society for the control of cancer has requested leading members of the medical profession to help arrange a mass meeting in Baltimore in September to acquaint the public with information about cancer. There will be a cancer clinic also, and several British cancer authorities, as well as others from this country, will be invited. Dr. Joseph C. Bloodgood, Baltimore, is chairman of the state cancer committee.

Personal.—Dr. Dean Lewis, professor of surgery, *Johns* Hopkins University Medical School, Baltimore, received the honorary degree of doctor of science at the recent commencement of the University of Wisconsin, Madison.——Dr. William H. Wilmer, director, Wilmer Institute for Diseases of the Eye, Johns Hopkins Hospital, received the honorary degree of doctor of science, recently, from Princeton University.——Dr. George H. Steuart, Relay, has resigned from the staff of the Relay Sanatorium, and will spend the summer at his *summer home at Ottoman, Va.*——A bust of Dr. Hugh H. Young of Johns Hopkins University was presented to the University of Virginia Medical School at the recent annual alumni meeting.

MASSACHUSETTS

Society News.—The Hampshire District Medical Society held its June meeting at the country home of Dr. Herbert B. Perry, Northampton; Dr. Dudley Carleton, Springfield, gave an address on "Traumatic Shoulders, Negative to Roentgen Ray."

Memorial Library.—At the recent meeting of the Harvard University Medical School Alumni Association, a memorial room to be used as a library was presented to the medical school by the widow and friends of Prof. Harold C. Ernst, the first professor of bacteriology at the medical school. Dr. Elliott P. Joslin officially presented the library, which was accepted by the dean, Dr. David L. Edsall.

Personal.—Harvard University conferred the degree of doctor of science recently on Dr. William L. Richardson, formerly dean of the faculty of medicine, and the degree of doctor of laws on Dr. George G. Sears.——Dr. Alice Hamilton, assistant professor of industrial medicine, Harvard University Medical School, Boston, received the honorary degree of doctor of science, recently, from Mount Holyoke College.

Harvard Medical Expedition to Africa.—Dr. Richard P. Strong, professor of tropical medicine, Harvard University Medical School, and about seven assistants sailed for London and Brussels, where they will complete their equipment and arrangements for an expedition to Africa to make a medical survey, studying particularly (1) nonmalarial splenomegaly; (2) lymph gland enlargement, and (3) the action of a new remedy for trypanosomiasis. The party will go to Liberia first; from there up the Congo to Lake Tanganyika, and from there to Nairobi and then to Mombasa. About a year will be allowed for the trip, which is financed from the funds of the department of tropical medicine of Harvard University Medical School and by aid from friends. A cablegram, July 9, stated that the expedition had arrived at Monrovia, and was ready to proceed with its work.

MICHIGAN

Disposition of Typhoid Carrier.—The state board of health has arranged for a home and has agreed to pay the board of an aged typhoid carrier on a farm near Laingsburg, where all members of the family have had typhoid. An investigation of twenty-three cases of typhoid fever occurring in this *community in recent years is said to have* shown that the typhoid carrier had worked on each farm where cases appeared before or during the time of the outbreaks; laboratory examinations demonstrated that he is a typhoid carrier.

Society News.—The Jackson and the Washtenaw County medical societies held their annual outing, June 24, at the Sylvan Estates Golf Club between Grass Lake and Chelsea. ——The Michigan State Medical Society recently held postgraduate conferences at Jackson, Fremont and Sheboygan, the attendance being eighty, seventy-five and twenty-eight, respectively; 75 per cent of those attending the Sheboygan conference traveled at least 150 miles to be present. The speakers at these conferences gave one or two days of their time, and were largely responsible for the successes.——The Alpena County Medical Society were recently guests of the Chippewa-Mackinac Society at Sault Ste. Marie; among others, Dr. John W. Purdy, Long Rapids, spoke on "Examination of the Chest."——Dr. William M. LeFevre, Muskegon, addressed the Berrien County Medical Society at Niles on "Surgical Emergencies of Diabetes."——The Eaton County Medical Society was addressed recently by Drs. Leo G. Christian and William E. McNamara of Lansing on "Medical and Surgical Aspects of Goiter."——At a joint meeting of the St. Joseph, Branch and Hillsdale county medical societies, June 16, Dr. Udo J. Wile of the University of Michigan Medical School spoke on "Peculiarities and Treatment of Syphilis."——Dr. James H. Dempster has been elected president of the Wayne County Medical Society, Detroit; Dr. Milton A. Darling, vice president, and Dr. Richard M. McKean, secretary.

MINNESOTA

State Medical Election.—At the meeting of the Minnesota State Medical Society Association, St. Paul, May 17-19, Dr. William F. Braasch, Rochester, was elected president; Dr. Samuel H. Boyer, Duluth, Dr. Herbert B. Aitkens, Le Sueur Center, and Dr. Frank D. Gray, Marshall, vice presidents; *Dr. Edward A. Meyerding,* St. Paul, secretary, and Dr. Earle R. Hare, Minneapolis, treasurer. The next annual meeting will be in Duluth.

County Society Demonstration.—The Hennepin County Medical Society, cooperating with the city health department, has inaugurated a campaign to immunize the children of Minneapolis between 1 and 16 years of age against diphtheria and scarlet fever. Four clinics have been established in the city which operate from 9 until 11 o'clock Tuesday *mornings; as soon as required, additional mornings* will be used for this work. The county society, through a special committee, directs the arrangements, procedure and personnel, and the physicians give their time without charge. The board of education and two settlement houses have lent rooms for the clinics; the division of public health supplies the material and the nurses. Only children of parents who are unable to pay for this service by family physicians are expected to avail themselves of the service. This is the first attempt to establish free clinics of this kind in Minneapolis and the first public group demonstration of preventive medicine undertaken by the medical society.

MISSISSIPPI

Hospital News.—The Kings Daughters recently laid the cornerstone of a new $250,000 hospital at Greenville.—The new Chamberlain-Rice Hospital at Natchez was recently opened.——A new Methodist Hospital is now under construction at Hattiesburg.

Society News.—Dr. Theophilus E. Ross, Hattiesburg, president of the state medical association, addressed the Northeast Mississippi Thirteen Counties Medical Association at Houston, June 15; Dr. J. Rice Williams was toastmaster at the banquet following the meeting.——Roentgenologists of the state held a meeting, recently, and appointed a committee to draw up a constitution for a permanent organization; they meet again during the annual meeting of the state medical association.

State Board Items.—Dr. Hardie R. Hays, Jackson, has been engaged by the state board of health to conduct epidemiologic investigations.——The state board resumed, July 1, the manufacturing and free distribution of antirabic serum to all citizens of the state; the board is manufacturing and distributing free to physicians and midwives 1 per cent silver nitrate ampules.——The state board of health will have an exhibit on the train which will begin a tour of the northern and eastern parts of the state, August 17; this will be called the "Know Mississippi Better" *train.——Dr. James T. Googe,* Booneville, has been placed in charge of the new Clarke County health unit.

MONTANA

Personal.—Dr. Albert F. Longeway, Great Falls, has been elected president of the Great Northern Railway Surgeons' Association.

Hospital News.—The department of the interior has completed plans for enlarging the hospital *for Indians* on the Fort Peck reservation from twelve beds to forty-four beds. The total number of Indians on the Fort Peck reservation is 2,273.

Research on Spotted Fever.—During the 1926 spotted fever season in Montana, about 625 persons were vaccinated against the disease with the Spencer-Parker vaccine. The results at present are favorable, the state board of health says, but it will take more time to prove the value of the vaccine. No person who had received the full number of vaccinations developed *spotted fever this* season, although two mild cases occurred shortly after the first dose had been given. Ten persons died among twenty-five unvaccinated patients in the state, making a mortality rate of 40 per cent, which is higher than usual. Experiments are in progress on an island off the coast of Massachusetts with a view of destroying ticks there by means of the introduction of a tick parasite; a Montana entomologist has been sent there to observe the experiments, and, should they be successful, these parasites will be introduced into Montana.

NEW JERSEY

Examiners Appointed.—The governor has announced the appointment of the following members of the state board of medical examiners: Dr. Leo V. Becker, Paterson, to succeed Dr. Alexander MacAlister, Camden; Dr. Arcangelo Liva, Rutherford, to succeed Dr. Davis P. Borden, Paterson, and Dr. Earl S. Halinger, Camden, to succeed Dr. Joseph H. Bryan, Asbury Park.

State Society Adopts Group Life Insurance.—The Medical Society of New Jersey, at its annual meeting, Atlantic City, June 10, adopted a plan of group life, health and accident insurance which had been developed by the Essex County Medical Society. To be effective, 75 per cent of the state society's members must subscribe, but any member may apply for either the life insurance or the accident and health insurance or both. The Prudential Insurance Company of America will, through the state society, issue a $5,000 life policy without a medical examination for an annual flat premium of $102, regardless of the age of the member. The rate is based on the actual present age of the members and will be determined each year by the average existing age. The $5,000 accident and health policy is issued by the Commercial Casualty Insurance Company of Newark, and is payable for accidental loss of life, eyes, hands or feet. There is a weekly accident indemnity of $50 for fifty-two weeks for complete disability, and of $25 for twenty-six weeks if an injury prevents the insured from performing important duties pertaining to his occupation. The annual premium rate for this is $70, and no medical examination is required.

NEW YORK

University News.—Syracuse University recently appointed the following physicians as associate professors of pediatrics in the medical school: George M. Retan, Abraham C. Silverman, Brewster C. Doust, and Arthur P. Foreman. Dr. Henry W. Schoeneck, also of the Syracuse department of health, was appointed professor of obstetrics.

Health in State Last Year.—The state department of health publishes an interesting summary about health during 1925. The mortality rate was 12.7 per thousand of population for the state as a whole, and 12.2 for New York City. The birth rate was 20.6 per thousand of population, the lowest ever recorded, and the infant mortality rate (68 per thousand live births) was also the lowest in the history of the state. The infant mortality rate in New York City was lower than for the rest of the state (65 per thousand live births). There has been a continual decline in the birth rate in New York since 1914, when it was 24.6, the result largely, it is said, of the decline in immigration. The death rate from puerperal septicemia was 10.2 in New York City, and 21.1 for the rest of the state. In the rural sections (less than 10,000 population) the rate was 9.9, while in the urban sections, exclusive of New York City, it was 25.6. In contrasting the causes of deaths last year to those of the year 1900, the health commissioner says that 21 per cent of the deaths were due to heart disease, whereas twenty-five years ago only 7.7 per cent were due to heart disease. Tuberculosis last year caused 7.1 per cent of the deaths in the state, and in 1900 it caused 12 per cent. Acute respiratory diseases in 1925 caused 11 per cent of the deaths, and in 1900 caused 16 per cent of all deaths. Increases in mortality rates have occurred in these twenty-five years from heart disease, cancer, diabetes and diseases of the arteries, and decreased mortality rates have come about in that period in gastro-intestinal diseases in children, diphtheria, typhoid fever and scarlet fever.

New York City

University News.—New York University is to open a campaign for $73,00,000 in celebration of its centennial in 1931. The funds are for additional land, buildings and an endowment, and $3,000,000 will be used for the medical and dental colleges.

High School Medical Society.—A medical society, composed of fourth year boys who intend to study medicine, has been organized at the Thomas Jefferson High School, New York. The boys have received special instruction in hygiene and first aid, and will be taught to assist in first aid in the medical office of the school. The club, according to the *Medical Journal and Record,* will be responsible for first aid at athletic meets, and a condition of membership in the club is a grade of not less than 80 per cent in first year biology.

Personal.—Winthrop J. V. Osterhout, Ph.D., of the Rockefeller Institute for Medical Research, received the honorary degree of doctor of science at the recent commencement of Brown University.——Dr. Peyton Rous of the Rockefeller Institute sailed, June 26, for Cambridge University, England, where he will spend a year in study.——Dr. Aaron Leifer has been appointed an instructor in medicine at the University and Bellevue Hospital Medical College of the New York University.——Dr. Josephine B. Neal received the honorary degree of doctor of science from Bates College, June 21.——Dr. Henry Beeuwkes, formerly of the U. S. Army Medical Corps, is now in charge of the yellow fever work of the International Health Board in Nigeria, West Africa.——Dr. Samuel J. Kopetzky gave a series of lectures the week of July 19, at Denver, under the auspices of the Colorado Oto-Laryngological Society.——Dr. Philip J. Trentzsch has been appointed psychiatrist to the Culver Military Academy, Culver, Ind., which is said to be the first secondary school in the country to have on its staff a full-time psychiatrist.

OKLAHOMA

Society News.—The Woods County Medical Society held a skin and cancer clinic at the city hall, Oklahoma City, recently, which was in charge of Dr. Everett S. Lain. In the afternoon scientific papers were presented, and in the evening there was a banquet and an illustrated lecture on cancer.

Test for Registration Area.—The U. S. Census Bureau is conducting a check of the registration of births and deaths in Oklahoma, to determine whether the state is qualified to become a part of the registration area of the United States. The requirement is that a state must have on record at least 90 per cent of its births and deaths, and the state health officer has made an urgent appeal showing the value of reliable vital statistics.

Prize Health Play.—The National Tuberculosis Association awarded the first prize in its health play-writing contest to the Pawhuska High School, Pawhuska, which submitted an Indian play, "Nelagony." Pawhuska is in the Osage Indian country. Nelagony is an Indian word meaning "good water." The state health officer plans to present the play in different parts of the state to stimulate interest in typhoid immunization. Several Osage Indians assist in the production.

PENNSYLVANIA

Personal.—Dr. Henry C. Lawton has been elected president of the newly formed Public Health Association of Cumberland County.——Dr. Horace V. Pike, Danville, received the honorary degree of doctor of science, June 9, from Susquehanna University.

Hospital News.—Reading Hospital, Reading, recently put into effect a flat rate for maternity service of $50 for two weeks in a two bed room, including all hospital fees, except that of the attending physician, and a flat rate of $40 in the wards.——The ten day campaign of the Memorial Hospital, Roxborough, resulted in the collection of about $205,000——The Columbia Hospital, Columbia, dedicated its new $100,000 annex, May 30, which was financed by the citizens of that city and vicinity.

Society News.—The Anti-Tuberculosis Society of Schuylkill County conducted a chest and heart clinic in Pine Grove, June 11.——Delaware County Tuberculosis Association conducted clinics at sixteen different centers during the last winter for the examination of tuberculosis suspects, making 345 examinations; each person examined was given a written report, and when possible, was recommended to his family physician to have the corrections made; during the summer, nurses of the association are making follow-up visits.

Protection of Health of Tourists.—The state department of health is supervising, in cooperation with the Keystone Auto Club, the sanitation of twelve large tourists' camps within a radius of 25 miles from Philadelphia, which have been established for tourists who visit the sesquicentennial exposition. These camps have the approval of the department of health; their sanitary condition is satisfactory, and the bureau of communicable diseases investigates any suspicion that might indicate an outbreak of contagion. The state health department employs extra help, also, to investigate the hundreds of "mushroom camps" which are springing up in the eastern part of Pennsylvania; its field laboratories are examining water supplies along the main highways, and marking approved sources of water with a sign in the state colors carrying the legend, "Safe Drinking Water Here." The state health commissioner urges that tourists cooperate with the department and avoid all springs, wells and pumps along the highways which do not carry this sign of approval.

Philadelphia

Hospital News. — The Luzerne County commissioners recently held a public hearing on the question of building a county tuberculosis hospital; no one appeared to oppose the new institution. Some years ago the county purchased a 90 acre farm near Drums as a site for the hospital.

Health Service for Small Plants.—The Health Council of Philadelphia is establishing two more units of 1,000 employees each, representing a number of the relatively smaller industrial plants, in order to provide them a health service similar to that maintained by the larger establishments. Dr. Glenn S. Everts, Cincinnati, will have charge of the new units. The health council for two years has conducted two such units, serving about 2,000 workers, with Dr. James W. McConnell in charge. The council does not expect to conduct more than the four units, as they are considered sufficient to demonstrate how smaller plants may cooperate to obtain an efficient health service for their employees. Each plant is given three hours of medical service a week for each 100 employees, accident service is furnished, new employees are examined, a physical examination is given each employee once a year, and clinics are held in each plant. After the units have been well established, it is expected that the plants will then carry on this work under their own administration.

TENNESSEE

Society News.—Dr. Walter S. Lawrence will address the Memphis and Shelby County Medical Society, August 3, on "Physiotherapy in the Treatment of Diseases," and Dr. William S. Anderson on "Radium Therapy in the Treatment of Cancer."——Dr. Herbert Acuff, Knoxville, was elected president of the International Civitan Clubs at Philadelphia, June 30.

Health at Memphis.—Telegraphic returns to the department of commerce, for the week ending June 19, from sixty-six cities with a total population of 29,000,000, indicate that the highest mortality rate (18.9) was for Memphis, and that the rate for the group of cities was 11.9. The mortality rate for Memphis for the corresponding week last year was 24.5, and for the group of cities as a whole, 11.1.

Hospital News.—The new Eye, Ear, Nose and Throat Hospital, Memphis, is expected to open, July 31.——The Memphis General Hospital School of Nursing announces that the new Marcus Haase Nurses' Home will be ready to receive probationers entering training this fall; the new building was planned with the nurses' comfort in mind, provision having been made for recreation and other similar features.

WASHINGTON

Personal.—Dr. Herbert L. Moon, Seattle, was recently elected president of the North Pacific Pediatric Society at the annual meeting at Victoria, B. C.——Dr. Harold B. Thompson, Seattle, was elected president of the Pacific Coast Roentgen Ray Society at the recent meeting in Victoria.

State Medical Election. — At the annual meeting of the Washington State Medical Association, Spokane, June 30, Dr. Harry G. Willard, Tacoma, was elected president; Drs. George C. Miller, Seattle, and William A. Taylor, Ellensburg, vice presidents, and Dr. Curtis H. Thomson, Seattle, secretary-treasurer. Drs. Frederick Epplen and Peter D. McCornack were elected delegates to the American Medical Association. The next annual meeting will be held in Tacoma.

Narcotic Question Goes to Supreme Court.—The collector of internal revenue at Tacoma will appeal to the U. S. Supreme Court for a ruling on the question as to whether he should register Washington *osteopaths and* accept the tax for the privilege of prescribing narcotics. Mr. Burns Poe, the collector, recently refused to accept this tax from osteopaths in view of the Beeler act, passed by the state legislature in 1923, and in view of a ruling of the state's attorney general that osteopaths are not entitled to possess narcotics under this law. A representative of the osteopaths brought mandamus proceedings in federal court, which held that the tax must be accepted.

Opinion About Pay Under Workmen's Compensation Act.——The assistant attorney general of the state has handed down an opinion on a question proposed by the Washington Association of Hospitals as to whether physicians working under the state workmen's compensation act may be paid on a scale slightly lower than that allowed by the state, although hospitals would receive the higher allowance. The hospital association claimed, it is reported, that the difference between the two scales would be justified if the ambulance service given in these cases by the hospitals was taken into consideration. The attorney general held that the hospitals cannot be permitted to establish their own scale of pay for physicians in these cases, and that such procedure would violate the law in that the money drawn from the state treasury would not be used for the exact purpose for which it was issued.

Sanipractor Loses Appeal.—The State Supreme Court upheld the Thurston County Court, July 7, in sustaining the revocation of the license of Rose S. Hagen, a sanipractor of Puyallup, by the state department of licenses. The court also upheld the validity of the law regulating the practice of drugless healing. The court said, it is reported, that "the evidence to our minds very conclusively shows that the license was procured by the relator by the practice of the grossest fraud." Sanipractor Hagen's license is said to have been revoked on the ground that she represented herself to be a high school graduate and to have attended a recognized school for three sessions of thirty-six weeks each. The evidence showed, it is said, that she did not have a high school education and had received a diploma from the American University of Sanipractic in Seattle after three months' attendance.

Society News.—Dr. Stuart Pritchard, Battle Creek, Mich., addressed the King County Medical Society, Seattle, on "Differential Diagnosis of Pulmonary Tuberculosis," illustrated with lantern slides.——Physicians of Skagit, Snohomish and Whatcom counties held their annual tricounty meeting, June 15, at Everett. Drs. Adolph O. Loe of the public health league, Lucien P. McCalla and J. W. Straight, and Dr. Sam L. Caldbick were the principal speakers, while Dr. Ottar A. Thomle, president of the Snohomish Medical Society, presided. Following a golf tournament won by the Whatcom physicians, a dinner was served at the Golf and Country Club in the evening.——The Klickitat-Skamania County Medical Society was organized in June at Goldendale with Dr. Charles R. Zener, White Salmon, president; Dr. John R. Barber, Stevenson, vice president, and Dr. Frank H. Collins, Goldendale, secretary-treasurer.

WISCONSIN

Personal.—Dr. William S. Miller, emeritus professor of anatomy, University of Wisconsin Medical School, Madison, received the honorary degree of doctor of science at the recent seventy-third annual commencement of the University of Wisconsin.——Dr. Ralph M. Carter, Green Bay, was recently elected president of the Fox River Valley Medical Society.——Dr. Leander P. Stamm and Dr. Timothy J. Howard have been appointed district physicians of the Milwaukee County Dispensary, succeeding, respectively, the late Dr. John H. Rohr and Dr. Alexander J. Heller, resigned.

Society News.—Dr. Abraham Levinson, Chicago, addressed the Milwaukee Pediatric Society, June 9, at the Children's Hospital on "The Meningitides and Their Treatment," and Dr. Milton Tobias, Racine, on "A Review of Tuberculosis in Childhood."——Among others, Dr. John A. Diamond addressed the Barron-Polk-Washburn-Sawyer-Burnett County Medical Society, June 8, Frederic, on "Management of the Second Stage of Labor," and, following a banquet in the evening, Hon. A. P. Nelson gave an address on the history of medical advance.——Dr. L. Rock Sleyster, Wauwatosa, addressed the Eighth Councilor District Medical Society, June 24, at Kelly Lake, Oconto County, on "Nervous and Mental Disorders in General Practice," and following a dinner in the evening, Dr. Frederick J. Gaenslen, Milwaukee, gave an address on "Orthopedic Problems *in General Practice*"; Dr. Gaenslen conducted an orthopedic clinic under the auspices of the Winnebago County Medical Society, June 11, at Oshkosh, for the benefit of the crippled of that city.

GENERAL

Experimental Work on Poliomyelitis at Warm Springs.—Franklin D. Roosevelt, formerly assistant secretary of the navy, has purchased several hundred acres, including the spring, pool, hotel and cottages, at Warm Springs, Ga., for the purpose of carrying out experimental work in the after-treatment of poliomyelitis by exercise in warm water. Mr. Roosevelt himself became a victim of poliomyelitis in 1921. The work at Warm Springs will be partially philanthropic, the cost to the patient being the actual maintenance. For the present, about thirty patients will be cared for, the future number depending on the results obtained in this experimental group. The methods of treatment have been endorsed by the American Orthopedic Association, according to *Health News,* and Dr. Leroy W. Hubbard, orthopedic surgeon of the New York State Department of Health, has been granted leave of absence in order to direct this experimental work.

First Pan-American Health Conference.—The U. S. Public Health Service is arranging the program for the First Pan-American Health Conference, to be held in Washington, D. C., September 22-29. An official call for the conference has been made by Surg. Gen. Hugh S. Cumming of the U. S. Public Health Service, who is director of the Pan-American Sanitary Bureau. The conference is in a measure preparatory for the Eighth Pan-American Sanitary Conference, to be held at Lima, Peru, in 1927. Among the subjects for discussion will be malaria, hookworm, public health measures and administration. The conference will be held by directors of health in the various South and Central American countries. Among the suggestions already received for consideration at the conference are health administration and organization, pure water supplies, safeguarding milk, disposal of sewage, infant mortality, and registration of communicable diseases, births and deaths, yellow fever, bubonic plague and smallpox.

Foot-and-Mouth Disease Commission Returns.—The commission consisting of Dr. Peter K. Olitsky, Rockefeller Institute for Medical Research, Jacob Traum, D.V.S., University of California, and Dr. Harry W. Schoening, U. S. Bureau of Animal Industry, which was sent to Europe by the Department of Agriculture to study foot-and-mouth disease, has returned after more than a year abroad. The commission established itself at the Institut d'hygiène, Strasbourg, and later at the Laboratoire national de recherches, Alfort, France, where experimental studies were made on the etiology of foot-and-mouth disease from its physical, chemical and biologic aspects. European investigators and the officials gave fullest cooperation in this work, and studies were made of control measures and research work in England, Denmark, Sweden, Holland, Belgium, Switzerland, Austria, Hungary, Italy, France and Germany. The scientists returned when they did because the appropriation for the study lapsed, July 1 (The Journal, March 28, 1925, p. 994).

National Board of Medical Examiners.—Surg. Gen. Edward R. Stitt was elected president of the National Board of Medical Examiners at the recent annual meeting, and Dr. John S. Rodman, Philadelphia, secretary, reelected; Dr. Otto Folin, professor of biochemistry, Harvard University Medical School, and Dr. Louis B. Wilson, Mayo Foundation, Rochester, Minn., were elected to fill vacancies in the board, and elections of Dr. Joseph B. De Lee, Chicago, and Dr. Alexander S. Begg, dean, Boston University School of Medicine, who had been previously elected members, were confirmed. Dr. Horace D. Arnold, Boston, retired by expiration of his second term in accordance with a regulation of the board that members are not eligible for more than one reelection. The board decided to establish a loan fund for worthy candidates who may need assistance in connection with the payment of the fee for part III of the examination. These loans will be available to candidates who take this part of the examination after October 1; the fee for part III was increased $5 by the board, effective October 1. Examinations in parts I and II will be held, September 15-17, in all class A medical schools where there is a sufficient number of candidates who desire to take them.

National Institute of Health Proposed.—In the closing days of Congress, a bill was introduced by Senator Ransdell of Louisiana "To establish a National Institute of Health, to authorize increased appropriations for the hygienic laboratory, and to authorize the government to accept donations for use in ascertaining the cause, prevention and cure of disease affecting human beings." The proposed National Institute of Health would be under the jurisdiction of the Treasury Department and the administrative control of the Surgeon General, U. S. Public Health Service. The bill would authorize the acceptance of gifts to be used by the government for study and research in pure science, and cooperate with the hygienic laboratory; it would permit the surgeon general to establish fellowships in aid of individual scientists who have demonstrated marked ability in research and investigation. Scientists designated to receive fellowships would be appointed for duty in the institute; and the facilities of the institute would be available to health authorities of states and municipalities for instruction and investigation. The bill proposes an appropriation of $2,000,000 a year for five years for a new and enlarged hygienic laboratory, including equipment and for establishing fellowships to scientists in researches affecting public health. In presenting the bill to the Senate, Senator Ransdell said, in part:

> Every man, woman and child on earth is vitally interested in promoting public health, in the study of diseases and how to cure and prevent them. The question of health is of supreme importance. National vitality is more important to a country than its commerce, agriculture, industry, finance, foreign affairs, public works, or any legitimate function of government. It affects the welfare of the nation more than all other problems combined. . . . It is through the joint intensive efforts of chemist, physicist, physiologist, pharmacologist, pathologist, immunologist and physician that remedies must come for the above-named ailments and others to which the human race is susceptible. How many years must unfortunate sufferers from these and other diseases wait for relief? That is the big question which confronts us, and its solution is of supreme importance. In my opinion, it can best be solved by the enlargement of the hygienic laboratory of the U. S. Public Health Service into a great chemomedical research laboratory, fully equipped to cope with all disease that afflicts the human race, endowed by liberal appropriations and private subscriptions to carry on most effectively, and also to furnish at least fifty fellowships to trained scientists, paying a moderate salary—say, $5,000 a year—so as to give them opportunity for thorough investigation.

Revised Standards for Milk Products.—The Secretary of Agriculture has promulgated for the guidance of officials in the enforcement of the federal Food and Drugs Act revised standards for milk products adopted by the food standard committee, which is composed of three representatives each of the association of American dairy, food and drug officials, of the association of official agricultural chemists and of the department of agriculture. The revised standards and definitions are as follows:

1. Milk is the whole, fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and five days after calving, or such longer period as may be necessary to render the milk practically colostrum free.
2. Pasteurized milk is milk that has been subjected to a temperature not lower than 145 degrees Fahrenheit for not less than thirty minutes, after which it is promptly cooled 50 degrees Fahrenheit, or lower.
3. Homogenized milk is milk that has been mechanically treated in such a manner as to alter its physical properties with particular reference to the condition and appearance of the fat globules.
4. Skimmed milk is milk from which substantially all the milk fat has been removed.
5. Buttermilk is the product that remains when fat is removed from milk or cream, sweet or sour, in the process of churning. It contains not less than 8.5 per cent of milk solids not fat.
6. Goat's milk, ewe's milk, etc., are the fresh, clean lacteal secretions, free from colostrum, obtained by the complete milking of healthy animals other than cows, properly fed and kept, and conform in name to the species of animal from which they are obtained.
7. Evaporated milk is the product resulting from the evaporation of a considerable portion of the water from milk, or from milk with adjustment, if necessary, of the ratio of fat to nonfat solids by the addition of or by the abstraction of cream. It contains not less than 7.8 per cent of milk fat, nor less than 25.5 per cent of total milk solids; provided, however, that the sum of the percentages of milk fat and total milk solids be not less than 33.7 per cent.
8. Sweetened condensed milk is the product resulting from the evaporation of a considerable portion of the water from the whole, fresh, clean lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and ten days after calving, to which sugar (sucrose) has been added. It contains not less than 28 per cent of total milk solids, and not less than 8 per cent of milk fat.
9. Evaporated skimmed milk is the product resulting from the evaporation of a considerable portion of the water from skimmed milk, and contains not less than 20 per cent of milk solids.
10. Sweetened condensed skimmed milk is the product resulting from the evaporation of a considerable portion of the water from skimmed milk to which sugar (sucrose) has been added. It contains not less than 24 per cent of milk solids.
11. Dried milk is the product resulting from the removal of water from milk, and contains not less than 26 per cent of milk fat, and not more than 5 per cent of moisture.
12. Dried skimmed milk is the product resulting from the removal of water from skimmed milk, and contains not more than 5 per cent of moisture.

CANADA

Personal.—Dr. Archibald W. Hunter, president, Vancouver Medical Association, resigned, July 1, as pathologist to the Vancouver General Hospital, and Dr. Harry H. Pitts, for several years in pathologic work in Dr. Crile's Clinic, Cleveland, will succeed Dr. A. W. Hunter as part-time pathologist, beginning August 1. Dr. Hunter will continue as consulting pathologist to the hospital.

Meeting of French-Speaking Physicians.—The ninth convention of French-speaking physicians of North America will be held in Montreal, September 21-24. Among the subjects for discussion will be surgery of gastroduodenal ulcers, significance of vertiginous conditions, prophylaxis of infantile syphilis, and the social prevention of tuberculosis. There will also be present leading men from South America, Belgium, Switzerland, Luxembourg, England and France. Dr. Romeo Boucher, Montreal, is secretary of the convention.

Society News.—Dr. Andrew A. Fletcher, Toronto, recently addressed the Oxford County Medical Society on "Diet and Insulin in the Treatment of Diabetes Mellitus."——Dr. Leonard A. C. Panton has been elected president of the Battleford District Medical Society.——Dr. Walter Ross Lane, Nanaimo, has been elected president of the Sixth District Medical Society.——At the annual meeting of the British Columbia Medical Association, Victoria, June 22, Dr. John H. MacDermot was elected president; Dr. Harold E. Ridewood, Victoria, president-elect, Dr. Wallace A. Wilson, Vancouver, vice president, and Dr. Theodore H. Lennie, Vancouver, secretary-treasurer.

Postgraduate Lectures.—The summer series of postgraduate lectures and demonstrations under the auspices of the Vancouver Medical Association will be given the week of September 13. There will be lectures morning and evening, and arrangements for clinical demonstrations are being made. The speakers will be: Dr. Aldred S. Warthin, professor of pathology and director of the pathologic laboratory, University of Michigan Medical School, Ann Arbor; Dr. George Gellhorn, professor of obstetrics and gynecology, St. Louis University School of Medicine; Dr. Carl A. Hedblom, professor of surgery, University of Illinois College of Medicine; Sir Henry Gauvain, orthopedic surgeon, London, England; Dr. George C. Hale, professor of medicine, University of Western Ontario Medical School, London, Ont.; Dr. Fraser B. Gurd, associate in surgery, McGill University Faculty of Medicine, and Dr. R. R. MacGregor, professor of pediatrics, Queen's University Faculty of Medicine, Kingston.

FOREIGN

Hospital for Japan.—The council of the Protestant Episcopal Church, at its recent session in Racine, Wis., voted to expend $900,000 of money already subscribed for the construction of the first units of the new St. Luke's Hospital at Tokyo, Japan.

New Director General of Army Medical Services.—Major Gen. Sir Matthew H. G. Fell has been appointed director general of the Army Medical Services of Great Britain, to succeed the late Sir William Leishman. Sir Matthew Fell was medical director for the Royal Air Force, 1918-1921, then inspector for the medical services of the army, and later deputy director of medical services in Turkey, Egypt, and in the Northern Command.

Record Production of Cod Liver Oil.—There has been a catch of 74,000,000 Kg. of cod fish in the province of Finmarken, Norway, so far this year; the previous record catch of 1911 was only 50,000,000 Kg. The U. S. Department of Commerce states that the large catch and low prices on cod livers are causing tremendous productions of medicinal cod liver oil, the production so far totaling 108,000 hectoliters, or more than 25 per cent above the production of last year.

Imprisonment for Quack.—The *Deutsche medizinische Wochenschrift* relates that an "eye diagnosticator," formerly a locksmith, who claimed to diagnose disease by merely looking in the patient's eyes, was recently condemned by the courts at Münster to nine months imprisonment. The charge was manslaughter from negligence, as he had been treating a woman with cholecystitis, who died from peritonitis in three days. The experts testified that an operation in time might have saved her life.

Memorial to Dame Aldrich-Blake.—A suitable memorial has been arranged in remembrance of Dame Louisa B. Aldrich-Blake, who died last December. A traveling scholarship open to surgical women graduates of medical schools in the United Kingdom has been arranged, and replicas of her portrait by Sir William Orpen will be placed in the Royal Free Hospital and the Elizabeth Garret Anderson Hospital, at both of which institutions Dame Aldrich-Blake was consulting surgeon. The value of the traveling scholarship will be, it is hoped, £300, to be awarded every two or three years as the funds allow. Contributions toward the memorial may be sent to the treasurer, Sir Alan Anderson, 5, Fenchurch Avenue, E. C. 3, London.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 3, 1926.

Food Preservatives: Regulations Delayed

The minister of health has decided in consequence of representations made to him to postpone the operation of the public health (preservatives in food) regulations so far as they relate to bacon and hams, for a period of six months; i. e., until July, 1927. In making this concession, the minister stated that he cannot contemplate any further postponement of the regulations, and that he cannot entertain any suggestion that the presence of boron compounds shall be permitted in bacon and ham imported or sold in this country after the date mentioned. The representations to which the minister refers were made by a number of trade organizations which desire a postponement of at least a year, in order that they might have time to make the necessary changes in manufacturing processes on account of the prohibition of the use of preservatives. In regard to the admixture of coloring matter in food, which is prohibited by the same regulations, two Irish scientists, Mr. J. F. Drumm and Prof. J. Bayley Butler of University College, Dublin, have elaborated a process by which the canning of such vegetables as peas, beans and spinach can be carried on without the use of coloring matter, the natural flavor and color of the green vegetable being retained. For many years past it has been the custom of some canners to use copper sulphate to "fix" the color of the vegetables during the canning process. The problem of destroying spore-producing bacteria, while retaining the color and flavor of vegetables without the addition of coloring matter, has occupied the research departments of the canning factories for the last forty years, and great importance is attached to the discovery just made by the Irish workers.

The Prevention of Poisoning by Lead Paint

In the house of commons, the home secretary, Sir William Joynson-Hicks, moved the second reading of the lead paint (protection against poisoning) bill. He said that while total prohibition of lead paint would be the most complete means of prevention, there was a great demand for lead paint, and employers who used it said that the substitutes were not in all cases satisfactory, though the use of substitutes was increasing. Consequently the bill proposed regulation, not prohibition. The regulations had been agreed on between employers and employed. They would enable substitutes to be used, and would reduce the possibility of poisoning by lead paint. In the debate, Mr. Rhys Davies said that the joint industrial council of the painters and decorators had declared that it could not support any bill which gave less protection to persons employed in painting than the convention adopted at Geneva provided. Cases of white lead poisoning were increasing in this country (in 1919, 207; in 1922, 246; in 1923, 337, and in 1924, 486). How could the home secretary enforce regulations on wet rubbing down, the use of overalls, the cleaning of finger-nails, when 70,000 painters and decorators were distributed among 20,000 houses? The home secretary replied that he was going to ask for more factory inspectors. Mr. Harney said that white lead represented 20 per cent of the lead output of the world, and 90 per cent of white lead was converted into paint. The danger was in the dust of lead. In factories the dust, disease and death were appalling at one time, but regulations were applied and there was now no extraordinary danger in working in lead factories. Lord Henry Bentinck said that the regulations would be useless to check the spread of disease. Wet rubbing down of paint was a fraud as a safeguard. Mr. Clayton hoped the regulations would insist that the working overalls of painters were not to be taken to their homes. In chemical works the men's overalls were washed on the premises. The bill was read a second time by a majority of 131 to 56.

The Pharmacologic Testing of Drugs

Mr. Chamberlain, minister of health, opened the new laboratories of the Pharmaceutical Society of Great Britain. These have been established to deal with the increasing use of therapeutic substances of animal origin and the exactitude required in their composition. Under the act of 1925 relating to the therapeutic substances, provision is made for the control of substances "the purity or potency of which cannot be adequately tested by chemical means." The laboratories will test such substances. The various medical bodies have cooperated in the preliminary consideration of the scheme, and on their recommendation Dr. J. H. Burn of the Department of Biochemistry and Pharmacology of the National Institute for Medical Research has been appointed director of the laboratories. Mr. P. F. Rowsell, the past president of the Pharmaceutical Society, said that the pharmacologic testing of drugs was a field of work that had been explored only during the last twenty-five years but was rapidly widening, and recent advances made in the method of pharmacologic testing indicated clearly to the council of the society that the society should be associated with this work. Dr. Burn emphasized the advance, made chiefly by this country, in the exactitude of biologic assay, and said that the society had decided to establish a vitamin testing department, in order to accumulate evidence should the ministry of health contemplate adding vitamin-containing preparations to the schedule of the therapeutic substances act. In the past, medicinal substances had been largely derived from plant tissues, but now for gland extracts the pharmacists must forsake the garden and the field for the less savory purlieus of the slaughterhouse.

The Ross Institute for Tropical Diseases

The Prince of Wales will, on July 15, formally open the Ross Institute and Hospital for Tropical Diseases at Tibbett's Corner, Putney Heath. The institute has been founded to commemorate the twenty-fifth anniversary of the discovery by Sir Ronald Ross of the transmission of malaria to man through the bite of the anopheline mosquito. It will be devoted to laboratory research and clinical investigation. Its objects are to carry on intensive research work in the prevention and treatment of tropical diseases, to assist physicians interested in such diseases to make researches, to treat sufferers from tropical affections, and to create more interest in malaria and disease control work. A large modern residence has been bought and adapted at a cost of about $125,000, and the working expenses are estimated at from $40,000 to $50,000 a year.

New "Dangerous Drugs" Regulations

The home office has given notice of its intention to amend the dangerous drugs regulations in important particulars, mainly in order to carry out recommendations in the report by the ministry of health committee on morphine and heroin addiction. A tribunal of three physicians, assisted by a legal assessor, is to be set up to decide charges of improper supply or possession of drugs against a physician. At present the home secretary can, in cases of irregularity, withdraw a physician's general authority to supply and possess, but he cannot do so until he has prosecuted him under the dangerous drugs act and has obtained a conviction in a court of law. When a physician should lose his authority, it is considered undesirable that it should be necessary to chase him into the police court. The mere withdrawal of the authority is often the appropriate penalty, without the fines or imprisonment of the court. Moreover, the issue is essentially medical, whether administration of the drug was justified. It is therefore proposed to alter the regulations so that, if there is reason to think that a physician is supplying, administering or prescribing a dangerous drug to or for himself or anybody else otherwise than is required for medical treatment, the home office shall be able to refer the case to the new tribunal. If the tribunal so recommends, the home secretary may withdraw the physician's authorization and may exclude him from the benefit of the exception of the regulation which allows the dispensing of drugs by physicians, dentists and veterinary surgeons to be exempted from the general prohibition on supplying and procuring dangerous drugs. If the physician is thus excluded, he is forbidden to give any prescription for the supply of such drugs.

Regulation 5, which deals with the giving of prescriptions, at present must be in writing, signed and dated, and must specify "the total amount of the drug to be supplied on the prescription." The latter words are to be elaborated into "the total amount of morphine, cocaine, ecgonine or diamorphine or any salt thereof to be supplied on the prescription except that in the case of a preparation which is contained in the British Pharmacopeia, the British Pharmaceutical Codex, or the drug tariff issued by the minister of health for national health insurance purposes and which is not combined with any other preparation of any of the drugs not so contained, it shall be sufficient to state the amount of the preparation so contained." It is also proposed to add that a physician shall give a prescription only when required for purposes of medical treatment. The committee also considered the possibility of detecting cases in which a patient obtains the drug of addiction from two or more physicians concurrently.

For the purpose of securing this object the home office proposes to amend regulation 7, which states the occasions when possession is not illegal. One is when the possessor proves that the drug was supplied for his use by a physician or on and in accordance with a lawful prescription. It is proposed to remove this protection for the possessor if he is under treatment from a physician for addiction to any of the drugs or otherwise and is being supplied by a second physician and does not disclose the fact. Another change is to cause all physicians, dentists and veterinary surgeons, if not already obliged to do so, to enter in a separate register, in the case of each supply, purchase or other obtaining of drugs, particulars of the date of receipt of supply, the name and address of the person, body or firm from whom it is obtained, the amount obtained, and the form in which it is obtained. This will remove a doubt that has been expressed in certain recent prosecutions. A final proposal is that every one authorized to carry on the business of manufacturing, selling or distributing the drugs must keep them in a locked receptacle of which he or a qualified assistant holds the key.

Bicentenary Celebrations of the Medical Faculty of Edinburgh University

The bicentenary of the foundation of the Medical Faculty of Edinburgh has been celebrated. The proceedings opened with the university dinner, attended by more than 200 members and guests. Sir John Gilmour, the secretary for Scotland, opened a new suite of rooms for the surgery department of the university, excellently equipped out of a gift of $250,000 by the Rockefeller Foundation for research work.

ITALY

(From Our Regular Correspondent)

June 15, 1926.

Combating the Abuse of Alcohol

The senate has approved a law to combat alcoholism. Formerly one license for every 500 inhabitants could be granted; under the new law, only one for every thousand of population may be issued. The law provides also for the issuance of licenses to definite persons, abolishes the granting of temporary licenses, and limits the number of hours that licensed vending places may remain open.

Award of Prizes at the Academy of Lynxes

The Accademia dei Lincei has held its accustomed annual meeting for the award of prizes. Senator Scialoja spoke of the increasing number of scientific publications being issued under the auspices of the academy. The Santoro prize was bestowed on Professor Bignami for his researches in malaria, and the Maria Bianca prize was conferred on Professor Sanarelli, of the University of Rome, for his studies in infectious diseases.

Award of the Manson Medal

Senator Ettore Marchiafava, professor in the University of Rome, has been awarded the Manson medal by the Royal Society of Medicine and Tropical Hygiene of London, for researches on various problems of malariology.

A New Welfare Movement

A decree has been issued establishing at Rome a welfare agency called the Fondazione Vittorio Emanuele III, the purpose of which is to provide extended outings at the seashore and in health resorts for the children of soldiers employed on the railways during the war, who have been found in need of treatment. The service will be gratuitous for orphans, while for children whose fathers are still in the employ of the state a small amount will be charged.

Bibliography of Biologic Chemistry

Under the direction of the Società italiana di chimica biologica, the review *Biochimica e terapia sperimentale* plans to open a column for Italian bibliography of biologic chemistry, the purpose of which will be to coordinate the publications in this field by Italian authors, which are at present scattered through a large number of periodicals. The reviews of the literature will be made monthly, and later will be collected and arranged according to subject, to form a bureau of bibliography.

The Visit of American Physicians

About 200 American physicians, members of the Interstate Postgraduate Association of Physicians of North America, spent recently a week in Rome visiting the university clinics.

New Regulations Pertaining to Medicolegal Certifications

A recent decree establishes new regulations pertaining to the procedure to be followed in the medicolegal certification of wounds and maladies occurring in the personnel of the state administration. For the purposes of such certification, a medical council has been created, under the minister of war.

Hospitalization of the Tuberculous

According to statements published by Professor Campani, about 8,000 beds are provided in Italy for the hospital treatment of tuberculous patients. For Italy's total population of more than 40,000,000 with 350,000 tuberculous patients, the number of sanatoriums is insufficient. The lack is especially noticeable in southern Italy.

GENEVA

(From Our Regular Correspondent)

June 25, 1926.

Anemia of Pregnancy

Dr. Paul Grospierre has recently studied the anemia of pregnancy from cases at the Maternity Hospital of the University of Bâle. He concludes that the frequency of this affection increases in direct ratio with the frequency of the labors and age of the patient.

Grospierre considers anemia of pregnancy to be one of the toxemias of pregnancy. In anemia of pregnancy there is at first hemolysis bringing about characteristic changes in the blood and mild jaundice. As in other toxicoses there is a premature interruption of pregnancy, resulting from the action of the toxins on the uterine muscle. Labor, as in eclampsia, is rapid, uterine contractions are regular and strong, the loss of blood small. All this is due to vasoconstricting and stimulating action of the toxins on the uterine muscle. The latter frequently causes an increase of the blood pressure for the same reasons. Grospierre further points out why anemia of pregnancy should be classified with the toxemias: 1. The onset of the anemia always coincides with pregnancy, especially in its second half, at a time when toxins have formed in large amount and the organs of destruction of these toxins are fatigued. 2. The anemia is often accompanied by some other toxicosis. If the patient survives her labor, the blood formula becomes normal. As to treatment of the serious types of anemia, interruption of pregnancy and blood transfusion must be resorted to promptly. Grospierre concludes that the anemia of pregnancy is quite different from Biermer's pernicious anemia.

Percentage of Mononuclears

Another study has been carried out by Dr. P. Mercanton, at Lausanne, on the mononuclears in normal human blood. He finds that the older observers give a much lower percentage than those of today. Mercanton gives the following averages of large mononuclears: Adults: men, 5.330 per cent; women, 5.322 per cent; children, 5.3864 per cent.

Fever in Cancer

Dr. E. Gonet, in investigating fever in cancer at Geneva, examined 375 cases of "medical" cancer. There were 150 cases of afebrile cancer, representing 40.2 per cent of the total number of cases. Some of the patients had a normal temperature regardless of intercurrent infection or infectious disease. Gonet found ten instances of hypothermic cancer in 2.7 per cent of his cases. Regardless of the subnormal temperature, two had pneumonia and one an intra-abdominal perforation. For most observers, fever in cancer is due to infection. In 80 per cent of cases the increased temperature is due to infection, but there remain 20 per cent in which the cause of the fever is to be explained. Gonet asks whether the neoplastic cells in the circulation do not give rise to fever just as bacteria do. Gonet supposes that febrile malignant neoplasms are those having direct contact with the circulation. Thus, their toxins are absorbed in massive amounts. This hypothesis explains the frequency of blood metastasis in noninfected febrile cancer, as well as the frequency of fever in sarcomas, which are richly vascularized growths giving rise to metastasis by way of the circulation.

Digestive Hemoclasia

Dr. N. K. Gharagozlow has recently been working on the subject of digestive hemoclasia at the medical clinic of the University of Lausanne. His experiments were carried out on twelve patients; namely, four cases of catarrhal jaundice, two cases of hepatic stasis due to asystolia, three cases of hepatic cirrhosis, one case of secondary hepatic neoplasm (metastasis of an alveolar cancer of the pancreas), and one case each of cholecystitis from gallstones and diabetes mellitus.

Some observers think that hemoclasis is not a symptom of an hepatic lesion, but rather a symptom of a vagotonic state, and this cannot be denied. Anaphylactic shock is related to the autonomic nervous system, and substances acting on the sympathetic and parasympathetic systems also influence anaphylactic shock. Now, since hemoclastic shock may be regarded as a special form of anaphylactic shock, it cannot be denied that the autonomic system may play a part in its appearance. It is difficult to explain the hemoclastic reaction encountered in hepatic affections if it depends only on the autonomic system and, as the reaction varies with the nature of the hepatic lesion, an important relationship must exist between hemoclastic shock and the hepatic lesion itself. The conclusion to all this is that hemoclastic shock is of real diagnostic value in diseases of the liver, as Widal has maintained, and the future will tell us whether or not the autonomic nervous system plays any part in the phenomenon.

JAPAN

(From Our Regular Correspondent)

June 15, 1926.

Commemoration Service for Dr. Koch

The Kitasato Institute held an annual commemoration service for Dr. Robert Koch, May 27, under whom Dr. Kitasato pursued his studies when in Germany.

"Sanocrysin" Therapy

Dr. Kobayashi, assistant expert in the Kitasato Institute, who has just been to Denmark to investigate "Sanocrysin" therapy in the Copenhagen University, has concluded that the present "Sanocrysin" must be improved before it can be applied to human tuberculosis.

Vice Director of Far East Epidemic Information Bureau in Singapore

Dr. Tadashi Sato has been appointed vice director of the Far East Singapore Epidemic Information Bureau of the Health Department of the League of Nations.

Literature on Cholera

Among Japanese epidemic literature, in course of compilation in compliance with the plan of the health department of the League of Nations, the section on cholera has been completed by Drs. Saeki and Takano, and soon will be sent to the head office of the League of Nations.

Physical Examination in Primary Schools

The Educational Department, which has established a research institute of physical education, has ruled that running, jumping, throwing and other athletic sports shall be taught in the schools. The authorities have undertaken general physical examination before and after exercise in all the primary schools.

New Tuberculosis Sanatorium

Tuberculosis in Tokyo has increased year after year, until 19,067 persons died of the disease in 1923. In that year the greater part of a tuberculosis sanatorium then in course of construction was destroyed by the earthquake. June 12, a new sanatorium was dedicated. The new building has 800 beds, and is one of the largest in the Far East. Dr. Tazawa has been appointed director.

Resignation of Dr. Doi

The syphilologist Dr. Doi, having reached the age limit of professorship at the Tokyo University, tendered his resignation. June 24, the faculty of the dermatologic institute, all medical students of the university, and his graduate pupils attended his last lecture. After the lecture an impressive farewell ceremony was held in his honor.

Investigation of Diseases of School Children

Educational department statistics recently published show the following diseases among school children:

Primary schools: 2,157,813 pupils over 6 years of age:

Diseases	Boys	Girls	Total Number
Trachoma	168,260	169,938	338,198
Other eye diseases	23,835	27,698	51,533
Defective hearing	5,262	3,482	8,744
Ear diseases	29,510	21,649	51,159
Gland diseases	2,406	2,181	4,587
Heart diseases	1,165	1,390	2,555
Anemia	1,069	1,156	2,225
Infectious skin diseases	20,514	10,860	31,375
Enlarged tonsils	26,418	51,207	77,625

Secondary schools: 350,511 pupils over 12 years of age:

Diseases	Boys	Girls	Total Number
Trachoma	12,156	11,002	23,158
Other eye diseases	3,433	2,437	5,870
Defective hearing	2,961	1,983	4,944
Ear diseases	1,852	1,168	3,020
Gland diseases	105	543	648
Heart diseases	509	451	960
Anemia	304	610	914
Infectious skin diseases	1,309	1,011	2,320
Enlarged tonsils	7,111	9,772	17,883

Normal schools: 25,400 pupils over 15 years of age:

Diseases	Boys	Girls	Total Number
Trachoma	951	471	1,422
Other eye diseases	537	362	899
Defective hearing	130	126	256
Ear diseases	114	36	150
Gland diseases	33	4	37
Heart diseases	85	24	109
Anemia	36	53	89
Infectious skin diseases	62	4	66
Enlarged tonsils	561	338	899

Trial of Gynecologic Masseuse

Judgment was given last April in the Tokyo local court in the case of a licensed masseuse who was charged with violation of the practitioner regulations by having treated 760 cases of gynecologic disease. In court, the opinions of experts differed, and she has been declared innocent on the ground that professional massage is not decidedly regulated by law. Several newspapers and medical magazines are adversely criticizing the decision on the ground that it will increase unlawful acts of professional masseurs to the menace of public health.

Exchange Professorship

The educational department believes that medical colleges, public or private, should have exchange professorships now and then. The medical colleges of Peking and Manchuria have been exchanging professors for the last five years. The medical college of the Seoul Imperial University has also made an exchange agreement with the Peking Medical College lately, under which Prof. Dr. Seijiro Kobayashi will lecture on parasitology.

Sewage Problem

Most of the 100,000 yearly cases of sickness in this country affect the digestive organs; typhoid accounts for 60,000 cases and dysentery for 22,000. Vegetables fertilized with human excrement cause the spread of the diseases, but considering the economic conditions of the farmers, the authorities cannot prohibit them fertilizing vegetables in this way. Dr. Takano, medical expert in the health bureau, the department of home affairs, has designed an inexpensive septic tank in which disease germs will die spontaneously while stored for a month. The material then may be taken off for fertilizer. The authorities are advising farmers to build such tanks and also are making investigations prior to compelling them to do so. Dwellers in large cities are worried by the excretions problem. Tokyo, however, has big sewage tanks in the suburbs. In Seoul, Korea, a huge tank is being constructed from which the excretions are to be taken off for manure after a certain period.

BUDAPEST

(From Our Regular Correspondent)

June 18, 1926.

International Medical Exhibition: "The Protection of Man"

An exhibition called "The Protection of Man" was opened in the Budapest industrial pavilions in the city park, June 6. The exhibition is a collection of everything that pertains to the lengthening of human life. The material from the recent Dresden exhibition called "Der Mensch"—Man—has been lent to the Budapest exhibit. The more notable exhibits are: a medical-numismatic collection; a collection of ancient pharmaceutic vases; embryologic anatomic preparations; a collection of monstrosities; visceral models; an historical collection of physiologic apparatus; models of organs; an instrument for the examination of potted meat and sausages; methods for the determination of katalase, fats and sugar; apparatus for making ozone; an exhibit concerning infectious diseases; a collection of tumors; an exhibit dealing with internal secretory and metabolic disturbances; a collection of vesical and gallbladder stones; pathologic-anatomic preparations of circulatory and industrial diseases; dry bone preparations; standardized bacterial cultures; photographs of different bacteria; electrocardiograms; a miniature plaster model of the Budapest morgue; a collection of poisonous herbs and mushrooms; a collection of bullets; an exhibit of appliances used in suicide; frequently used poisonous drugs of especial interest; edible and poisonous weeds; a collection of blood pictures; a collection of roentgenograms of gastric and duodenal ulcers; cultures of Koch bacilli; artificial histologic cultures; the raw materials used in the national Magyar kitchen; tables illustrating the work of the medical clinic of Budapest University; a collection of instruments used in pediatrics; a collection of urinary calculi of children; preparations, drawings and photographs relating to acute infectious diseases and poisoning with potassium hydroxide; a collection of foreign bodies; a collection of brain cuts; photographs of the ears, hands and feet of insane persons; a collection of drawings, paintings and needle work made by asylum inmates; preparations illustrating pathologic changes of the eyes; a collection of foreign bodies removed from eyes; the spectacles of the late Count Stephan Tisza; preparations illustrating tuberculous processes; an echinococcus series; kidney preparations, ureteral calculi and roentgenograms of the urinary apparatus; foreign bodies found in the bladder; foreign bodies removed from the nose, pharynx, esophagus and respiratory organs; an exhibit illustrating the prevention of diseases of the buccal cavity; diseases of the teeth and jaw; a collection of material relating to the protection and education of the people; sanitation for laymen; handicraft objects; popular medicines; quack medicines used by fakers; bacteria cultivated from the water of the Danube and river Theiss; an historical exhibit of rural sanitation; the irrigation of farms; parasites, insects and their extermination; gunshot and stab wounds; roentgenograms of rachitic children; cholecystograms; photographs of spondylitis, and of deformities of the body due to bone tuberculosis.

Besides these, the following collections are on view: photographs of dental diseases; statistical tables, showing the work of the Budapest Ambulance Society; material used in the teaching of first aid; allegorical pictures illustrating how to give first aid; a demonstration of changes connected with abnormal function of the glands of internal secretion; a collection of cerebral and spinal tumors; preparations, models and photographs of congenital and acquired articular and osseous changes; a collection of pictures of war injuries and their treatment on the field; lifelike statues illustrating normal and pathologic postures of the human body; diagrams of the prophylaxis, pathology and treatment of acute infectious diseases; the total material of the Deutsches Hygiene Museum (Dresden) and Museum of Public Hygiene of the People (Budapest); tables, diagrams, preparations and roentgenograms of tuberculosis, its prevention and medical and social treatment; the fight against tuberculosis; propaganda work.

In a special pavilion the tuberculosis sanatoriums show the work done in connection with the treatment and education of the indigent tuberculous. Another pavilion serves for the exhibition of the struggle against the spread of venereal diseases. There is a collection illustrating dermatologic diseases. The ministry of labor exhibits models of houses built by the state for workmen, and tables showing the nutrition and education of the working classes and peasants. The prophylactic work against alcoholism is shown. One section shows the evolution of man from conception to birth, the normal and pathologic processes of the latter, and the individual and social protection of the wife. In another group is explained the development of the infant in its first three years of life, the pathologic conditions influencing development, the mental evolution of children, and the national organization tending to protect both healthy and sick infants. The Union internationale de secours aux enfants of Paris and other foreign establishments have exhibits in a separate pavilion. The life of state maintained children's work, the placing of children with families, and the social and medical attendance of cripples with congenital and acquired malformations is shown in a special section. There is an exhibit of reformatories in which the results of forced training is shown. Another section elucidates the function of closed and open children's protective institutions, and the preparation of the new people's food "Soja," a Hungarian invention, made of certain herbs, much cheaper than bread, while its nutritive value exceeds that of bread. The Hungarian Red Cross Society shows its instructive work done during and before the war. The Free Milk Society shows its work. The Free Bread Society exhibits a number of photographs of weakly children before and after being supplied with free bread. The Village Association exhibits a model village with all modern hygienic and sanitary equipment. There is an exhibit of the hand work of the Invalid Home. The Hungarian Baptist Congregation exhibits material showing its fight against the "one child system," tuberculosis, alcoholism, and the measures for the protection of the aged and infants. The Hungarian Association for the Prevention of Trade in Girls has exhibited pictures and drawings illustrating the evils of prostitution, and propaganda work against it. A special pavilion is devoted to death, where a collection of death masks, conserved corpses and models of different burial methods is exhibited. In the curative pedagogic section, details of the education of abnormal children is shown. A pavilion serves to display gymnastic and sporting apparatus; special Hungarian sports are held daily. In another pavilion advice is given to children as to selecting a career, and psychotechnical methods are used here by competent teachers who are also physicians. The invalidity section of the ministry of welfare exhibits photographs and roentgenograms showing the restitution of crippled limbs, artificial limbs and other prosthetic devices which are manufactured in their own workshops. The criminologic museum of the state police exhibits instruments used in the fight against antisocial and antinational individuals. It visualizes all the details of criminal investigation. The workmen's compensation office exhibits models, photographs and statistical tables presenting its activity during the last decade.

The foreign section of the exhibit contains the preparation of Spalteholz, the "Transparent Man." In fine specimens the evolution, anatomy and physiology of man are displayed. All preparations are embedded in glass; hence their name, the "transparent man." The exhibit of the Wilhelminen Hospital of Vienna deals with the treatment of lupus and its results. There is an exhibit of operations for the removal of foreign bodies, different methods of treating fractures and an ambulance kit used in cases of railway disasters. Models of artificial limbs, some of them original, are shown. The society "Die Flamme" exhibits a model of its crematory. The Vienna *Gesunden Kasse* (union of the healthy) displays its scheme of social work, directed toward the prevention of disease. The hygienic institute of the University of Graz exhibits models of drinking wells, with special regard to the prevention of goiter. The town of Baden, Austria, exhibits a collection of skulls. From Vienna come exhibits, models, pictures and statistics relating to children's health.

BERLIN

(From Our Regular Correspondent)

June 12, 1926.

The Credibility of Juvenile Witnesses

In his recently published work, "Jugendliche Zeugen in Sittlichkeitsprozessen" (Juvenile Witnesses in Suits Involving Immorality), Prof. Dr. William Stern shows how easily children and juveniles are influenced by questions that bear within them a suggested reply, and how easy it is for a child to come to believe and to insist on the truth of false or loose statements, as the result of testifying at repeated hearings. There is a tendency for testimony of juveniles to become more and more untrustworthy, the oftener it is repeated. The difficulty of securing accurate information from children is further complicated by the fact that parents often use corporal punishment "to freshen their memory." Following the parents come the police, who usually deal with the situation in such a rude way that juveniles are profoundly influenced psychically. Under all circumstances in which juveniles are concerned, the preliminary police hearing should be made as short as possible and cases should be brought at once before judges who would appoint qualified persons to conduct a hearing with the aid of psychologists. A child's statements are often influenced by his imagination. For instance, three girls told their teacher that, on the previous afternoon, a strange man had accosted them in one of the vacant rooms at school and had threatened to stab them. An investigation revealed that there was not a word of truth in their story, and yet the assumption seemed strongly supported that not one of the girls had any intention of uttering an untruth.

The most tragic case of all is the following: The principal of a school had been giving a 14 year-old girl private instruction. One day he broke off the private lessons because the girl, who conceived the notion that the teacher thought she was lying to him, had, weeping, thrown her arms around his neck and kissed him. The parents pressed the child with questions to discover whether anything further had happened, which assumption the girl denied. Five weeks later she committed suicide by drowning, and in a letter she stated that the principal had brought "great—very great—disgrace" on her. On the basis of the letter, the principal was sentenced to two years in the penitentiary. Thus far attempts to have the case reopened have been futile, although even to a layman it is apparent that it was owing to the suggestive questions of the parents that the child gradually conceived the notion that her teacher had brought disgrace on her, and that, under the peculiar influences that surround the onset of puberty, she had allowed that conception to take possession of her mind. After the death of the girl, her virginity was established by a medical examination. In court proceedings and in preliminary hearings, the cooperation of psychologists should be obligatory, particularly in trials involving moral delinquencies.

Restrictions on Medical Advertising

A booklet issued by the executive committee of the Hamburgische *Aerztekammer* (chamber of physicians) contains the following: "Physicians must be very conservative with respect to the size and shape of office signs. They must not bear any objectionable details with regard to modes of treatment, such as phototherapy, electric treatment, roentgenologic examination, diathermy, blood examination, cosmetic treatment, elimination of defects. Announcements with reference to roentgen-ray examinations and roentgenologic treatment are restricted to roentgenologists by profession. The wording on signs must be all in one color. Signs should not ordinarily be larger than 30 by 40 cm. Special permission must be secured from the committee appointed by the *Aerztekammer* before affixing signs at any other place than the place of practice. The posting of placards in drug stores and other public places is prohibited. Attracting attention by notices in city directories, telephone directories and the like, by a special form of type or reference to special modes of treatment, is unethical."

PRAGUE

(From Our Regular Correspondent)

July 1, 1926.

Death of Professor Babak

The death of Professor Edward Babak of Brno is recognized as a serious loss to those familiar with Czech medicine. Professor Babak was a man of international reputation and one who built up a whole generation of pupils. He was born in 1873 in Smidary, Bohemia, and obtained his medical education at the Czech medical faculty in Prague. He began lecturing at the same faculty in 1903 on general physiology. Professor Babak was the organizer of the medical faculty in Brno. He assembled men and money for the maintenance of the medical faculty. He was the organizer of the Czechoslovak Biologic Society and the editor of the Biologicke Listy (*Biologic Review*). He organized also the excellent school of veterinary medicine at Brno. His publications comprise 160 papers printed in Czech and German biologic periodicals. He started his research activities in continuation of the work of his teacher Professor Mares on the metabolism of the new-born. Soon he found his own line of physiologic research in comparative physiology, which he introduced into Czech biology. His studies on respiration are summarized in Winterstein's Handbuch der vergleichenden Physiologie, in which he wrote the volume on respiration. Of his popular treatises should be mentioned his book on Nutrition and another one on the Biology of the Child. The last topic was one of his hobbies and found expression in the foundation of the Scientific Society for the Study of the Child. A small accident (fracture of the calcaneus with embolism of the pulmonary artery) brought his fertile life to a premature end.

Visit of American Physicians

The Czechoslovak Republic has had a visit of more than 100 American physicians arranged through the Inter-State

Postgraduate Association of North America. The group were guests of the Czech and German medical faculties in Prague. On June 13, an excursion was arranged to the radium watering place in Jachymov, from which comes the uranium ore in which the Curies discovered radium. From Jachymov the group was brought to Carlsbad. Apparently, the American visitors were satisfied with their trip, and the excursion was a useful means for the spread of mutual information.

Seventieth Birthday of Professor Janosik

Prof. Jan Janosik, the senior of the Czech medical faculty in Prague, is celebrating this month his seventieth birthday. Professor Janosik was born in 1856 in Vrbatky, Moravia, and graduated in medicine at the Prague medical faculty. In 1884 he began lecturing on histology and embryology, which remained his chief line of research even after he became the chief of the Institute for Normal Anatomy at the Czech Medical Faculty in Prague. He has won repute through his studies on the development of the genito-urinary system, the pancreas and the spleen. He wrote also a treatise on Histology and Embryology for students and a textbook on Normal Anatomy.

Arteriosclerosis Among Surgeons

Dr. E. Rychlik aroused considerable interest through the article that he published recently on the hygiene of the operating room. He called attention to the fact that most of the prominent Czech surgeons die early as a result of arteriosclerosis. As instances he cited Maydl, Pavlik, Pitha, Kukula and Znojemsky, who all died before the age of 55 under different clinical manifestations of arteriosclerosis. He does not believe that it could be caused by overwork and mental strain, for similar expenditure of energy can be found in other branches of medicine without the same harmful effects. He comes to the conclusion that the chief cause of the high mortality among surgeons is the bad hygiene of operating rooms. He has found that the performance of an operation in a small operating room is more exhausting than the same performance in an airy room. Another unfavorable factor is the high temperature which many surgeons require for the operating room from the fear of pneumonia or alterations of the abdominal organs exposed during the operation. In Dr. Rychlik's experience there was no such occurrence in spite of the fact that long ago he discarded the overheating of the operating room. Often the sterilizing room adjoins the operating room, so that the vapor can penetrate directly into the room where the operation is being performed. Most of the disinfectants for the hands have been discarded because of the danger of chronic poisoning through absorption. In most hospitals, denatured alcohol is now used for this purpose. The atmosphere, filled with anesthetic vapors which undergo decomposition in the wet and hot atmosphere of the operating room, give rise to poisonous gases. The use of local and spinal anesthesia should find the widest application in surgery for the benefit of the surgeon and the patient. Dr. Rychlik pleads also for better recreational facilities for young physicians in the hospitals.

Changes in Medical Curriculum

The German Medical Faculty in Prague has worked out some changes in the medical curriculum to be tried out in the coming semesters. Students will be introduced into the clinical subjects earlier than formerly. Pathology will be taught in the later semesters, together with pharmacology, toxicology and hygiene. The idea of the reform is to bring the medical student as early as possible into contact with the patient, and give him the theoretical sciences as the necessary supplement of the experience that he has gained at the bedside.

Marriages

Bartholomew Francis Macchia, Boston, to Miss Victoria Louise Bellizia of Arlington Heights, Mass., June 25.

William Payne Thompson, New York, to Miss Margaret Elizabeth Caughey of Glens Falls, N. Y., July 1.

Don B. Stewart, Zeigler, Ill., to Miss Helen Perry of Mount Vernon, at Louisville, Ky., June 23.

William L. Hanson, East St. Louis, Ill., to Miss Mildred Champion of Granite City, June 29.

Walter R. Mansfield, Boston, to Mrs. Charles E. Osgood of Jamaica Plain, Mass., June 12.

William P. Hofmann, Davenport, Iowa, to Miss Marie Burnette of Lost Nation, May 18.

Harlan Page Mills to Mrs. L. Colton Thompson, both of Phoenix, Ariz., June 28.

Anthony P. DeGraffenried to Miss Helen Purdy, both of Bayside, N. Y., May 19.

Dewey E. Morehead, Oxford, Wis., to Miss Ruth Howe of Minneapolis, June 22.

Deaths

Alexander Duane ⊕ New York; Medical Department of Columbia College, New York, 1881; member of the American Academy of Ophthalmology and Oto-Laryngology (president, 1923), the American Ophthalmological Society and the New York Ophthalmological Society; served during the Spanish-American War; author of a textbook on ophthalmology and other books; aged 67; died, June 10, at the Neurological Institute.

William Otto Gross ⊕ Fort Wayne, Ind.; Fort Wayne College of Medicine, 1893; past president of the Allen County Medical Society; formerly professor of toxicology, Indiana University School of Medicine, Indianapolis; president of the Wayne Pharmacal Company since 1913; member of the school board, 1904-1907; at one time on the staff of the Lutheran Hospital, where he died, June 25, of heart disease; aged 65

Frank George Wheatley ⊕ North Abington, Mass.; Dartmouth Medical School, Hanover, 1884; vice dean and professor of pharmacology, Tufts College Medical School, Boston; formerly member of the state legislature; chairman of the school board for several years; member of the House of Delegates of the American Medical Association, 1906, 1911-1912; aged 74; died, June 14, of acute melancholia.

Claude M. Jones, Grimesland, N. C.; University of Maryland School of Medicine, Baltimore, 1892; member of the Medical Society of the State of North Carolina; aged 65; died, May 23, at the Washington (N. C.) Hospital of injuries received when struck by an automobile.

Sherman T. White ⊕ Redding, Calif.; Eclectic Medical Institute, Cincinnati, 1888; St. Louis College of Physicians and Surgeons, 1900; president of the Shasta County Medical Society; aged 62; died, June 19, of edema of the lungs.

Sidney Curtis Hardwick, Maitland, Fla.; Tufts College Medical School, Boston, 1905; member of the Massachusetts Medical Society; served during the World War; aged 42; died, June 16, at Hingham, of pulmonary tuberculosis.

James T. Milner, Patesville, Ky.; Louisville Medical College, 1897; member of the Kentucky State Medical Association; member of the county board of health; aged 53; died, May 28, at the Owensboro City (Ky.) Hospital.

Willis Virgil Kingsbury, Butte, Mont.; St. Louis College of Physicians and Surgeons, 1887; member of the Medical Association of Montana; served during the World War; aged 61; died, June 14, of cerebral hemorrhage.

Robert Scott Spilman, Lexington, Va.; University and Bellevue Hospital Medical College, New York, 1899; member of the Medical Society of Virginia; Spanish-American and World War veteran; aged 58; died, May 22.

Edward Eames Holman ⊕ Pine River, Minn.; Hahnemann Medical College and Hospital, Chicago, 1878; Harvey Medical College, Chicago, 1896; proprietor of a hospital bearing his name; aged 71; died, June 25, of myocarditis.

Frederick Roland Malone, Greensboro, Md.; University of Maryland School of Medicine, Baltimore, 1882; member of the Medical and Chirurgical Faculty of Maryland; aged 67; died suddenly, May 18, at Chestertown.

John F. Johnson, Fullerton, Neb. (licensed, Nebraska, 1891); member of the Nebraska State Medical Association; Civil War veteran; formerly county and city health officer; aged 84; died, May 22, of angina pectoris.

John Jacob Remsburg, Mount Pleasant, Md.; Maryland Medical College, Baltimore, 1901; member of the Medical and Chirurgical Faculty of Maryland; aged 63; died; February 10, of bronchopneumonia.

Louis Spanier, New York; Columbia University College of Physicians and Surgeons, 1903; member of the Medical Society of the State of New York; aged 45; died, June 3, at the Neurological Hospital.

August Schwarze, St. Louis; Missouri Medical College, St. Louis, 1882; member of the Missouri State Medical Association; aged 77; died, June 28, at the Lutheran Hospital, following an appendectomy.

John T. Howell ⊕ Wilkes-Barre, Pa.; Jefferson Medical College of Philadelphia, 1881; on the staff of the Wilkes-Barre General Hospital, where he died, June 16, aged 75, of carcinoma of the stomach.

George Robinson Glass, Uniontown, Pa.; College of Physicians and Surgeons, Baltimore, 1891; member of the Medical Society of the State of Pennsylvania; aged 58; died, June 22, of cerebral hemorrhage.

John Wright Withers, Pine Bluff, Ark.; Medical Department of the University of the City of New York, 1879; formerly member of the board of health; aged 70; died, June 24, of cerebral hemorrhage.

John Prior Douglas, Arlington, Tenn.; University of Nashville Medical Department, 1873; Civil War veteran; for fifteen years superintendent of the Western State Hospital, Bolivar; aged 82; died, May 27.

Clarence Gilbert Goodwin, Chicago; Northwestern University Medical School, Chicago, 1903; member of the Illinois State Medical Society; aged 56; died, June 28, of cerebral hemorrhage.

John W. Deckard, Richfield, Pa.; Cincinnati College of Medicine and Surgery, 1874; member of the Medical Society of the State of Pennsylvania; aged 76; died, April 14, of pneumonia.

Everhard Hamilton Richardson ⊕ Cedartown, Ga.; University of Georgia Medical Department, Augusta, 1872; president of the Polk County Medical Society; aged 76; died, May 15.

Edward M. Copeland, London, Ont., Canada; University of Western Ontario Medical School, London, 1890; aged 67; died, May 17, at the Victoria Hospital, following a long illness.

Thomas B. Miller, Goodnight, Texas; Kentucky School of Medicine, Louisville, 1881; aged 73; died at Fort Worth, March 6, of shock, following an operation on the prostate.

Marshall Price Jones, Churchville, Va.; College of Physicians and Surgeons, Baltimore, 1892; member of the Medical Society of Virginia; aged 62; died, May 21, at Staunton.

Martha Cochrane Strong, Jackson, Mich.; University of Michigan Medical School, Ann Arbor, 1875; member of the Michigan State Medical Society; aged 81; died, June 24.

Samuel Kutscher ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1909; on the staff of the Lebanon Hospital; aged 40; died, May 31.

John William Sanford ⊕ Ripley, Tenn.; Memphis Hospital Medical College, 1886; aged 63; died, June 25, at the Baptist Memorial Hospital, Memphis, of bacillary dysentery.

Arthur George Cooke, Herkimer, N. Y.; Albany Medical College, 1910; formerly a practitioner in Chicago; served during the World War; aged 42; died, May 25.

M. F. Griffin, Parkersburg, W. Va.; St. Louis College of Physicians and Surgeons, 1893; aged 66; died, May 20, at the home of his daughter in Point Pleasant.

Wallace Nelson Moore, Englehart, Ont., Canada; University of Toronto Faculty of Medicine, 1923; aged 27; died, April 18, at St. Michael's Hospital, Toronto.

Willis Jay Ramsay Brewster, Valatie, N. Y.; Bellevue Hospital Medical College, New York, 1890; aged 62; died, April 18, of carcinoma of the intestine.

William Dunlap, Detroit; Rush Medical College, Chicago, 1869; Civil War veteran; aged 75; died in May, of chronic prostatitis and interstitial nephritis.

Joseph Warren Worcester, Middletown, N. Y.; College of Physicians and Surgeons, Baltimore, 1888; also a dentist; aged 66; died suddenly, April 25.

Carl E. Cashatt, Salem, Ore.; University of Oregon Medical School, Portland, 1914; aged 46; died, June 8, at Oakland, Calif., of chronic nephritis.

Joseph M. Huber, Chicago; Hahnemann Medical College and Hospital, Chicago, 1906; aged 50; died, June 10, of chronic nephritis and uremia.

Howard Terry, Jr., Phoenixville, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1901; aged 49; died, May 19, of heart disease.

Bert C. Sickles, Petoskey, Mich.; Detroit Medical College, 1881; aged 69; died, June 7, at the Blodgett Hospital, Grand Rapids, of heart disease.

William MacIntosh, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1883; aged 75; died, June 23, of myocarditis.

John James Mustard ⊕ Olympia, Wash.; University of Southern California College of Medicine, Los Angeles, 1907; aged 48; died, June 13.

Charles M. Williams, Kokomo, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1881; aged 78; died, June 1, of paralysis.

Samuel Shouse Woodburn, Pittsburgh; Jefferson Medical College of Philadelphia, 1882; aged 67; died in June, of angina pectoris.

Edward C. Allworth, London Mills, Ill.; Jenner Medical College, Chicago, 1898; aged 68; died, June 13, of carcinoma of the throat.

Gustave H. Michel, Cleveland; Western Reserve University School of Medicine, Cleveland, 1898; aged 67; died, June 10, of carcinoma.

Merinda M. Haughton, Paris, Maine; Eclectic Medical College of Maine, Lewiston, 1886; aged 89; died, March 14, of carcinoma.

William Franklin Twigg ⊕ Cumberland, Md.; University of Maryland School of Medicine, Baltimore, 1883; aged 69; died, June 6.

William S. Herdman, Olympia, Wash.; Cooper Medical College, San Francisco, 1873; aged 75; died, May 23, at Vashon.

Charles R. Oatman, Collinsville, Ill.; St. Louis Medical College, 1871; aged 80; died, June 29, of heart disease and senility.

Herbert Orson Munson, Manley, Neb.; University of Nebraska College of Medicine, Omaha, 1895; aged 51; died, May 29.

James Frank Raine ⊕ Sykesville, Pa.; College of Physicians and Surgeons, Baltimore, 1905; aged 57; died suddenly, June 3.

Louis V. Benoit, St. Hyacinthe, Que.; Laval University Medical Faculty, Montreal, 1886; died in April, of pneumonia.

George Rubard, Bellevue, Ohio; Eclectic Medical Institute, Cincinnati, 1871; aged 76; died, in May, at Fremont.

Arthur Grant Church, Marfa, Texas (licensed, Texas, under the Act of 1908); aged 47; died, June 1, of uremia.

Oscar Everett Abel, Modoc, Ind.; Medical College of Indiana, Indianapolis, 1885; aged 66; died, June 2.

John A. Brophy ⊕ Philadelphia; Medico-Chirurgical College of Philadelphia, 1897; aged 61; died, June 9.

Edwin G. Mason ⊕ Cawker City, Kan.; Eclectic Medical Institute, Cincinnati, 1885; aged 71; died, May 5.

Leonard Franklin Cline, Kitchener, Ont., Canada; Trinity Medical College, Toronto, 1888; died, April 22.

H. Horace Long, Orion, Ill.; Jefferson Medical College of Philadelphia, 1868; aged 85; died, June 6.

Cornelius Dekker, Grand Rapids, Mich.; Louisville Medical College, 1897; aged 54; died, April 24.

Lawrence Henry Peebles, Bishopville, S. C.; Atlanta Medical College, 1879; aged 72; died, May 31.

George Cheney Blish, Galena, Ill.; Chicago Medical College, 1881; died, July 4, of heart disease.

Thomas J. Osburn, Stonefort, Ill. (licensed, Illinois, 1877); aged 86; died, May 28.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

NATIONAL GOITER TREATMENT

At Mason City, Iowa, a concern known as the "National Goiter Treatment Corporation" has been treating goiter on the mail-order plan. The concern was incorporated in March, 1923, and the incorporators and officers were:

H. G. Hamilton, President.
L. M. Hamilton, Vice President.
A. J. Gamm, Secretary and Treasurer.

H. G. Hamilton is said to be a promoter, while L. M. Hamilton is the wife of H. G. A good many of the letters that have been sent out, in the past at least, purporting to come from the "medical department" of this concern, have been signed either "Dr. E. McEwen" or "Dr. H. H. Lawrence."

According to our records, Earle McEwen was born in 1857 and was graduated by the Hahnemann Medical College and Hospital in 1881, being licensed in Iowa in 1887. Presumably the local medical society is not familiar with the fact that Dr. McEwen is, or at least has been if he is not still, connected with this goiter cure concern, as he is a member of his local society and through that has qualified as a Fellow of the American Medical Association.

Herbert H. Lawrence, who, presumably, is the H. H. Lawrence whose signature has appeared on some of the National Goiter Cure material was, according to our records, born in 1867, and was graduated by the Chicago Homeopathic Medical College in 1893, being licensed in Iowa in 1896. He is not a member of his local society.

Letters have been received during the past two or three years from physicians and others similar in tenor to those that follow. This from a Minnesota physician:

> "Will you kindly give me the 'low-down' on Dr. E. McEwen of Mason City, Iowa? One of my patients has been interviewed recently on two occasions in an effort to get her to subscribe to his treatment for goiter cure, guaranteed for ten years, to the tune of a cash payment of $35 with the remainder of $140 to be paid within thirty days."

This from a minister in Iowa:

> "A few days ago an agent of the National Goiter Treatment Corporation, Mason City, Iowa, called on us and said that his company cures goiters in about one year's time. The cost would be about $175 to $240. They claim to cure with medicine, and that their way is the only right way. Would you tell me what you know and think about this?"

This from an Illinois physician:

> "Will you kindly send me what information you have in regard to the National Goiter Treatment Corporation, Mason City, Iowa? A Dr. McEwen is supposed to be at the head of this concern."

A Michigan lawyer wrote:

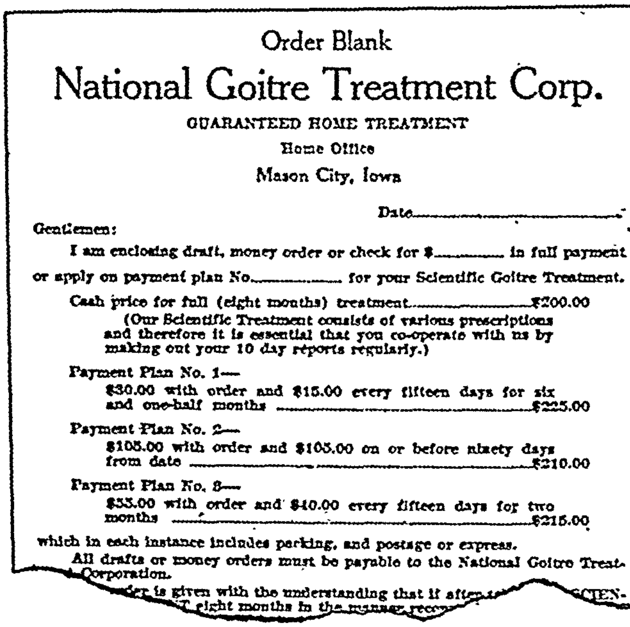
> "I have a client who very foolishly agreed to take a course of treatment from the National Goiter Treatment Corporation of Mason City, Iowa. The medicine they sent made her deathly sick, so she had to discontinue taking the treatment. She wrote to this concern the results of the treatment and they wrote back recommending that the doses be reduced to one-half the former amount, so she began again, but with the result that she again became ill. A local doctor, of course, advised the entire discontinuance of the treatment. This lady has very foolishly paid this concern an advance fee, and, as she is a poor woman, I would like, if possible, to assist her to get this back. She received a form of guarantee, but before she could finish complying with its terms, she would doubtless be dead."

The National Goiter Treatment Corporation's victims seem to have been obtained by agents. Representatives of the company would go to the smaller towns and get in touch with those who either have goiter or who think they have goiter. Apparently a diagnosis was made on the basis of a questionnaire of the type usually employed by mail-order quacks. In common also with mail-order quacks, the concern has used what it is pleased to call a "guarantee." One of the guarantees that we have in our possession is printed on buff-colored paper in gold and dark blue. It bears a serial number and an imposing gilt seal with a purple and yellow ribbon. The guarantee reads as follows:

> "If after taking our Scientific Treatment eight months in the manner recommended by us, and our suggestions in regard to the treatment have been followed out; and if you have written one letter every ten days telling us of your condition and have not obtained satisfactory results; we, the undersigned, do hereby agree to extend the time of your treatment, without charge, until we are convinced that we cannot obtain satisfactory results for you, and you hereby agree to give us your hearty co-operation during this extended period. This guarantee is void in the following cases: if patient gets married, or becomes pregnant while taking this treatment. In the event we fail to get satisfactory results for you, upon your request, we will refund the money you have paid for our treatment, purchased since the date hereof. We guarantee our treatment not to contain narcotics or habit-forming drugs."

A careful reading of this indicates that the victim must continue using the preparation until the mail-order concern is convinced that it "cannot obtain satisfactory results" before a refund would be made.

A physician in Minnesota reported the case of a man who was called on by an agent of the National Goiter Treatment Corporation, "who measured his neck and then added one-half inch to this measurement, so that the company would realize the seriousness of the complaint." This man took the "treatment" religiously for some time without results: in fact, in one of his letters to the company he stated that his goiter was getting larger, to which they replied that enlargement of the goiter was usual during the menstrual period!



Order Blank

National Goitre Treatment Corp.

GUARANTEED HOME TREATMENT

Home Office

Mason City, Iowa

Date..

Gentlemen:

I am enclosing draft, money order or check for $.............. in full payment or apply on payment plan No................ for your Scientific Goitre Treatment.

Cash price for full (eight months) treatment........................$200.00
(Our Scientific Treatment consists of various prescriptions and therefore it is essential that you co-operate with us by making out your 10 day reports regularly.)

Payment Plan No. 1—
$30.00 with order and $15.00 every fifteen days for six and one-half months $225.00

Payment Plan No. 2—
$105.00 with order and $105.00 on or before ninety days from date $210.00

Payment Plan No. 3—
$55.00 with order and $40.00 every fifteen days for two months $215.00

which in each instance includes packing, and postage or express.

All drafts or money orders must be payable to the National Goitre Treat-Corporation.

der is given with the understanding that if after SCIEN-
T eight months in the manner recom

Some time ago specimens of the National Goiter Treatment's nostrum were submitted to the A. M. A. Chemical Laboratory, with the request that they be analyzed. The Laboratory reported as follows:

LABORATORY

"Two original bottles labeled 'National Goiter Treatment Corporation' were submitted to the American Medical Association Chemical Laboratory for examination. The wording on the labels of each of the bottles was in the main the same, except that one bottle contained the statement 'Not Over 10 per cent. Alcohol' and carried a typewritten designation 'Prescription 1f,' while on the other bottle was printed 'Not Over 15 per cent. Alcohol' and a typewritten designation 'Prescription 3K.' Each bottle contained about 240 cc. (8 fluidounces) of a dark brown syrupy liquid with suspended matter present and having an odor resembling so-called sarsaparilla. Qualitative tests indicated the presence of sodium, potassium, tannic acid, alcohol, a relatively large amount of sugar, and traces of iron and aluminum. Iodides were present in one specimen and absent in the other. Alkaloids, emodin-bearing (laxative) drugs, and arsenic compounds were not found. The following quantitative estimations were made (as iodide was absent in specimen 3K, quantitative estimations of sodium and potassium were not made):

	Sample 1f	Sample 3K
Specific gravity	1.39	1.21
Ash	0.32%	0.29
Potassium (K^+)	0.452%	....
Sodium (Na^+)	0.152%	....
Iodide (I^-)	1.70%	None
Alcohol	8.2%	17.4%

"The amount of iodide in specimen '1f' is equivalent to 2.22 per cent potassium iodide. The manufacturers direct that one teaspoonful of the syrup be taken thirty minutes after each meal. Each dose (4 cc.) therefore, contains the equivalent of 0.12 Gm. ($1\frac{8}{10}$ grains) of potassium iodide, and the daily dose recommended is equivalent to 0.36 Gm. ($5\frac{4}{10}$ grains) of potassium iodide."

The dangers of administering iodides in cases of hyperthyroidism are obvious enough to physicians, but would not be obvious to the general public, even if those who took the National Goiter Treatment were in a position to know what they were getting. We were not surprised, therefore, when a Minnesota physician reported three cases of patients who had taken this nostrum with serious untoward results. The physician added that, apparently, when the victims of the concern complained, they got no results and the only satisfaction was "another batch of medicine and advice."

Correspondence

FREAK PATENTS

To the Editor:—In respect to patented medicines and nostrums which are generally controlled by "process patents" I think you will find, as I did, that the most interesting communication on that subject in medical annals was the report made to Congress in 1849-1850 and to the American Medical Association in 1850, by Dr. Edwards. It could not be bettered much if any at this date.

You should have a copy of the "Jackson and Morton Patent No. 4848 for Improvement in Surgical Operations" in your files. Gwathmey (Anesthesia, 1924) refers to the "application" for a patent by Jackson and Morton in the following language:

> LETHEON.—On October 27, 1846, Morton and Jackson sought to patent their anaesthetic under the name of "Letheon." From its odor it was soon recognized as "sulphuric ether."

That is an erroneous statement, "Letheon" being merely a "trade name" used in the sale of the combination of ether and essential oils. The patent itself discloses exactly what the combination was and the reasons for incorporating the oils.

The main reason that the patent office is again indulging in freak medical patents is primarily failure of a committee of your association to cooperate with one of the dental profession on the subject in the early nineteen hundreds. As chairman of the Patent Committee of the National, now American Dental Association, I had the honor to be in charge of legislation to prevent the issuing of such patents respecting dentistry, and I made a personal plea to the members of your committee then meeting in Washington, D. C., to cooperate to the end that the practice be stopped, and indicated that the amendment to the patent laws in my charge was equally applicable to medical practice and as important.

Our efforts had succeeded to the point of having a favorable report from a house committee and the sympathy of President Theodore Roosevelt, but all the encouragement that was given me by the chairman of the medical committee was that the members as individuals might assist if they chose.

However, I received no such assistance, except from leading members of the medical profession which I solicited (Drs. Osler and Welch of Baltimore among them), notwithstanding that the pressure became so strong that the Patent Office officials and the graduate in medicine in charge of the section to which such patent investigation belonged, Dr. Williamson, agreed not to issue patents on the art of healing disease conditions of the human body "unless they could be placed on the market and sold." This would have been the effect of the legislation then being promoted by our association had it been passed.

The Patent Office did not desire legislation because it might interfere with "process patents" of all descriptions, the supreme court having indicated in the Risdon Iron Works and the Westinghouse decisions, that it was an open question if process patents were patentable under the laws of the United States, unless they contained chemical or other elemental action.

It might also be interesting to physicians to know that this confusion in the minds of the court was due to the decision of the court in the case of *Morton* v. *New York Eye and Ear Infirmary* in respect to the Charles T. Jackson and W. T. G. Morton patent no. 4848 of Nov. 12, 1846, for "An improvement in surgical operations" (ether anesthesia).

This decision is a leading case in the courts today as it was when first decided in 1862, that the patent was invalid and is the deciding feature in all "process patents."

The court said (respecting the Morton process, 1862):

> It is nothing more in the eye of the law than the application of a well known means to a new and more perfect use, which is not sufficient to support a patent.

This decision controls today, and the supreme court in what is known as the Expanded Metal Case merely followed its former reasoning by adding practically the principle of the legislation we were promoting before Congress at the time the decision was made; viz., "unless it contains chemical or other elemental action" or can be manufactured and placed on the market and sold. The production of the "expanded metal" in the process patented was such that it could "be placed on the market and sold" as it was manufactured in original form.

The precarious position of "process patents" ever since the Morton decision and reasoning of the court has been a constant worry to the American Manufacturers Association and the Patent Attorneys' Association, both of which bodies strenuously objected to the legislation we were promoting to amend the patent laws, and the principle referred to above controls the situation today.

The patent of which you complain, no. 1369997, involves no different principle than that of the Morton patent, and therefore is not patentable under the patent laws of the United States, and would be declared invalid should court action be taken, the fact that the patent has been granted notwithstanding.

Emory A. Bryant, D.D.S., LL.B., M.P.L.,
Washington, D. C.
Lieutenant Commander (D. C.), U. S. Navy.

NAME BADGES FOR NURSES AND STAFF

To the Editor:—It is an accepted fact that a personal relationship between patient and physician, and patient and nurse, is an important factor in aiding in the recovery of the patient. In order to obtain that personal relationship, it is necessary that the physician and the nurse should not consider the patient only as a case but as a human being.

In order to add to the personal touch, I have inaugurated at our hospital name badges for the nurses. Each nurse has a badge with her name printed on it, which she wears while on duty. This serves as an introduction between the nurse and the patient, and helps to establish a more confident feeling in the patient toward the nurse. It also helps the physicians to know the nurses that are to carry out their orders. It aids the supervisor in knowing her nurses and remembering their names. It permits the patient to call the nurse by name, to which she responds more cordially, and enables the patient to name the nurse when wishing to praise her or have her censured, instead of attempting to give a description of what she looks like.

The name badge also has a number of stars (one, two or three) preceding the name, indicating the rank of the nurse, which aids the visiting physician to know who is in charge of the floor or department, and also fixes the status of the nurses among themselves.

The name badges should also be worn by all interns and members of the resident staff with a designation of the rank, for similar reasons. In fact, we are extending the use of the name badges to all that come in contact with patients or visitors, from the information clerk up to the superintendent.

In the business world, the displaying of the person's name in attendance has long been adapted, and its usefulness proved; but I know of no hospital having used it. In the short time that it has been used at our hospital, we have found it of tremendous value, and wonder how we got along without it.

Morris Leff, M.D., New York.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FEEDING EAGLE BRAND CONDENSED MILK

To the Editor:—Will you kindly tell me just what are the objectionable features in using Eagle Brand milk as an artificial food for babies? While I have never used it in my practice, as I am under the impression that it is "not a suitable food," I do not know exactly just what are the objectionable features. I do know that the makers advertise this product, with complete directions to the mother, disregarding the rôle the physician should play in infant feeding. The last named feature is certainly objectionable for obvious reasons, yet there must be others of which I am not informed. I have noticed, too, in children who have been fed on Eagle Brand milk, that there seems to be improper dentition and a marked susceptibility to tonsillitis. These observations are only personal.

Lesley E. Wallace, M.D., Thebes, Ill.

Answer.—Eagle Brand condensed milk is not a suitable food for infants. Similar condensed milk products with various forms of carbohydrates added are advertised as "baby foods" and deserve similar criticism. Eagle Brand condensed milk has the following percentage composition: fat, 8.85; protein, 7.34; milk sugar, 11.61; cane sugar, 42.90; ash, 1.77; water, 27.50. Any dilution of this product with water will result in too high a percentage of carbohydrates, if sufficient protein and salts are furnished to promote proper growth and development. The fact that infants, as a rule, have a relatively high carbohydrate tolerance permits the feeding of such a mixture. The low fat content and fine protein coagulum further favor the high carbohydrate tolerance.

In a certain few carefully selected cases the trained physician may for a short period find advantage in using such a product. However, even in these cases the indications may be as well, or possibly better, met by other rations. For the laity and as a routine for physicians not interested in infant feeding, it is not to be recommended.

The literature furnished by the Borden Company is not to be accepted as in agreement with the general feeding procedures of our medical centers. In a booklet, "The Summing Up of an Important Subject," which is offered to physicians in the hope that they will give "a thorough trial of Eagle Brand condensed milk as a complete, efficient and sufficient food for the bottle-fed baby," one finds the following:

3d day to 3d week, 10 feedings 2 oz. each in 24 hours.
3d week to 5th week, 9 feedings 2 oz. each in 24 hours.
5th week to 3d month, 8 feedings 2½ oz. each in 24 hours.
3d month to 5th month, 7 feedings 3 oz. each in 24 hours.
5th month to 9th month, 6 feedings 3 oz. each in 24 hours.

In the same table (which is offered as "a guide for physicians") during the period from 4 months to 9 months, 30 teaspoonfuls of Eagle Brand diluted with water are advertised for a day's feeding. From the percentage composition given above this would represent approximately: fat, 10.62 Gm.; protein, 8.80 Gm.; carbohydrate, 65.41 Gm.

To meet the average infant's daily requirements for metabolism and proper growth when fed on cow's milk mixtures, approximately 1.5 Gm. of protein, from 1.5 to 2 Gm. of fat and from 4 to 6 Gm. of carbohydrate are required for each pound of body weight. At the minimum for the foregoing ages, 4 months, the average infant should weigh 15 pounds (7 Kg.). This would give (from the 30 teaspoonfuls of Eagle Brand advised in the above mentioned table): fat, 0.70 Gm. per pound body weight; protein, 0.58 Gm.; carbohydrate, 4.36 Gm. Obviously, as the weight increases, which it should during this four months period, these figures will be still further diminished, so that an infant of 6 months, which should weigh as an average 17 pounds (7.7 Kg.) will receive: fat, 0.62 Gm. per pound of body weight; protein, 0.51 Gm.; carbohydrate, 3.84 Gm. One should expect an infant to fail to make proper development on such feedings.

Infants fed on Eagle Brand are usually of two types: One group, showing evidence of overfeeding with carbohydrate and insufficient fat, protein and salts, are usually plump, round and overweight. They are the ones pointed out with pride by the uninformed. However, their flesh is soft and flabby, and the weight does not indicate a healthful condition.

Overfeeding with carbohydrate stimulates the storage of the excess in the form of glycogen. Glycogen is one of the important factors in water retention by the tissues. This retained water is responsible to a large degree for the rapid gain in weight. Infants so fed are susceptible to frequent minor nutritional upsets. These may result in a more serious state recognized as marasmus. Acute upsets, frequently with diarrhea, are common. These infants also have an increased susceptibility to infection, which is often a further factor in their rapid change to a serious nutritional disturbance. Water loss is rapid. Anhydremic intoxication is favored unless prompt measures are taken and proper food given.

The second group are undernourished, underdeveloped and frequently rachitic infants. They are "delicate babies" with small bones; they are pale, their flesh feels flabby, and there is little subcutaneous fat. These infants have received quantitatively as well as qualitatively too little food.

The prolonged feeding of sweetened condensed milk offers difficulties to the physician. These difficulties are certainly increased when the feedings are prescribed by the average lay person attempting to follow the only too freely offered literature.

BACILLUS ACIDOPHILUS MILK FOR GASTRIC ULCER

To the Editor:—Can acidophilus milk be used in place of the cream-milk mixture in gastric and duodenal ulcer feedings? This acidophilus milk has from 0.4 to 0.6 organic acid (lactic). Would this be a contraindication and would organic acid act as an inorganic acid (HCl) in the treatment?

I. W. Bach, M.D., Champaign, Ill.

Answer.—The method of production and some of the characteristics of bacillus acidophilus milk are described in New and Nonofficial Remedies, 1926, p. 211. The products most commonly marketed contain only about 2 per cent of fat, though some firms are now preparing bacillus acidophilus milk from whole milk, so that the resulting fluid ready for consumption contains approximately 4 per cent of fat. From the standpoint of dietotherapy of gastric and duodenal ulcers, for which a high content of fat is usually advised because of its inhibitory influence on acid gastric secretion that may irritate the lesion, the acidophilus product cannot be commended. However, cream could be added if the inclusion of more fat were the only factor to be adjusted. A greater objection may be found in the acidity of the bacterially modified milk. This ranges about p_H 4. If this should be regarded within the domain of objectionable acidity, as some clinicians insist, there remains the possibility of neutralizing the acid prior to the feeding of the bacillus acidophilus milk. Neutralization to about p_H 6.5, the range of violet litmus, is suggested. If this is carefully done, the bacteria are not destroyed and will probably remain viable in the intestine.

WATER FROM TANK LINED WITH TAR

To the Editor:—A group of summer cottages have a community water tank. This was recently painted inside with tar to prevent leaking, with the result that the water has a strong odor and taste of tar, and contains particles of tar. Is this water dangerous to health? It is supposed to be used for drinking, cooking and bathing purposes.

E. B. Pfefferkorn, M.D., Kimberly, Wis.

Answer.—While an odor and taste of tar may be disagreeable, there is no reason to believe that water from such a tank is dangerous to health.

carcinomas, and mixed tumors. The author recommends minute investigation of very early testicular tumors in order to furnish additional information concerning causation. While infectious processes do not seem to be of causative dignity, as a rule, two of his own cases make the author believe that this item cannot be absolutely excluded. These two cases and observations of Monod and Terillon permit the warning that in any case of epididymo-orchitis not acting in the orthodox manner, a malignant condition should be suspected. Dr. Dew recommends radical operation, including the removal of the contiguous lymphatic appendages, and outlines the operative procedure. For postoperative treatment he advises radiotherapy and the administration of Coley's serum. The numerous illustrations are well chosen and instructive.

Mental Invalids. Being the Morison lectures delivered before the Royal College of Physicians of Edinburgh in June, 1925. By C. C. Easterbrook, M.A., M.D., F.R.C.P.E., Physician-Superintendent, Crichton Royal, Dumfries. Cloth. Price, 5 shillings net. Pp. 86. Edinburgh: Oliver & Boyd, 1925.

This series of three lectures, reprinted from the *Edinburgh Medical Journal*, reviews in a simple manner the subject of mental disorders in general without discussing the various types. The first lecture deals with mind as the highest level of integration of the organism, the lower levels being the vegetative and sensorimotor systems. Excellent use is made of the newer conceptions of psychology, and the material is presented simply and conservatively, though necessarily briefly. The later lectures are devoted to methods of examination of patients, and the causes, classification and general treatment of mental disease which the author has found of value in his thirty years' experience in psychiatric work. These on the whole are sound, but offer little that will not be found in any modern textbook on psychiatry. The nomenclature employed is different in many respects from that in common use in the United States and would be confusing to students, a drawback that is not compensated for by a sufficiently marked superiority in other respects, even though the book is fundamentally good.

Wunderheilungen und ärztlich Schutzpatrone in der bildenden Kunst. Von Dr. Oskar Rosenthal. Boards. Price, 24 marks. Pp. 42, with 102 illustrations. Leipsic: F. C. W. Vogel, 1925.

In all times men have had their miracles of healing, the performances of charlatans and the legends of faith. The volume prepared by Dr. Rosenthal contains facsimiles of a hundred paintings and sculptures relating to miraculous cures. A beautiful gift volume, and one which at the same time enshrines a permanent record of human credulity.

A Classification of the Tumors of the Glioma Group on a Histogenetic Basis with a Correlated Study of Prognosis. By Percival Bailey and Harvey Cushing. From the Surgical Clinic and Laboratory of the Peter Bent Brigham Hospital and the Laboratory of Surgical Research of the Harvard Medical School. Cloth. Price, $5. Pp. 175, with 108 illustrations. Philadelphia: J. B. Lippincott Company, 1926.

Gliomas of the brain formed 42 per cent of a series of 1,000 intracranial tumors. Though such gliomas are usually regarded as early and inevitably fatal, the authors noted that many patients after incomplete extirpation of a cerebral glioma survived longer than expected, and this fact led them to make a thorough study of the structure and clinical history of 254 gliomas subjected to surgical treatment. Using the best modern methods for the microscopic study of glioma, the authors classify their gliomas according to structure and designate them in harmony with the terminology now used for cerebral histogenesis and histology. No less than thirteen classes of glioma are described, and to what extent this grouping will be accepted generally is of course something that will be determined in the future. From comparison of the structure with the clinical course, it emerges that gliomas composed of less differentiated cells are more active in growth than those made up of more differentiated cells. About half of the gliomas studied were comparatively benign except when inaccessible or so situated as to cause stasis of the arachnoid fluid. The survival of the patients varied from a few months to ten years or more, and the length of the survival period corresponded closely to the increasing differentiation of the glioma cells. The book is an important contribution to our knowledge of cerebral glioma, its life history, prognosis and treatment. It is a choice by-product of surgical work fully organized in the interest of investigation.

The Aspergilli. By Charles Thom and Margaret B. Church of the Microbiological Laboratory, Bureau of Chemistry, United States Department of Agriculture. Cloth. Price, $5. Pp. 272, with illustrations. Baltimore: Williams & Wilkins Company, 1926.

This book is chiefly devoted to a discussion of the different kinds of aspergilli, their nomenclature, classification and general diagnostic characters. As stated in the introduction, the treatise is primarily taxonomic. No worker concerned with this group can afford to ignore this comprehensive and valuable compilation. The chapter on aspergilli and animal disease is not very satisfactory, probably because much of the evidence for the etiologic relation of these molds with animal disease is itself inconclusive. The unconvincing and confusing nature of much of the available material is reflected in some of the authors' statements. For example, in discussing the possible effect of moldy food on health, the authors state (p. 84) that "there exist nevertheless enough positive results such as the feeding of grain molded by *A. maydis* (Quevedo) to support the advice to exclude moldy products from human and animal consumption"; while on page 89 a summary of Quevedo's work is concluded with the statement, "The organism has not since been identified or studied in the light of more recent researches of forage poisoning. Until such repetition is possible the results must now be regarded as questionable." Positive results on page 84 become questionable results on page 89. The book is excellently printed. There is an elaborate synoptical key, a good index, and 127 bibliographic references.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

Praktikum der physiologischen Chemie. Von Peter Rona. Erster Teil: Fermentmethoden. Paper. Price, 15 marks. Pp. 331, with 73 illustrations. Berlin: Julius Springer, 1926.

A handbook of physiologic chemistry involving ferment methods.

Rectoscopie. Sigmoidoscopie: Traité d'endoscopie recto-colique. Par le Dr. R. Bensaude, médecin de l'hôpital Saint-Antoine. Second edition. Paper. Price, 100 fr. Pp. 178, with 214 illustrations. Paris: Masson et Cie, 1926.

Beautiful atlas of things seen by the methods concerned.

The Secretion of the Urine. By Arthur R. Cushny, M.A., M.D., LL.D. Second edition. Cloth. Price, $5.50. Pp. 283, with 39 illustrations. New York: Longmans, Green & Co., Ltd., 1926.

New edition of an exceptional thesis by recognized authority.

Three Men Discuss Relativity. By J. W. N. Sullivan. Cloth. Price, $2.50 net. Pp. 249. New York: Alfred A. Knopf, 1926.

A simple discussion of an involved hypothesis by the dialogue method.

Text-Book of Materia Medica for Nurses. Compiled by Lavinia L. Dock, R.N., and Jennie C. Quimby, R.N. Eighth edition. Cloth. Price, $2.25. Pp. 317. New York: G. P. Putnam's Sons, 1926.

If nurses need to know these things, here they are.

Zur Kenntnis der psychischen Residuärzustände nach Encephalitis epidemica bei Kindern und Jugendlichen, insbesondere der weiteren Entwicklung dieser Fälle. Von Privatdozent Dr. med. et phil. Rudolf Thiele, Assistent der Psychiatrischen u. Nervenklinik der Charité. Paper. Pp. 100. Berlin: S. Karger, 1926.

A Directory of Sanatoria, Hospitals, Day Camps and Preventoria for the Treatment of Tuberculosis in the United States. Compiled by the National Tuberculosis Association. Cloth. Price, $1. Pp. 132. New York: National Tuberculosis Association, 1926.

Miscellany

A DISPLAY OF FAKIRISM

A demonstration of fakirism given at the New Scala Theater by fakir Dr. Tahra Bey, to which physicians were invited, is described by Dr. C. P. Blacker in *Guy's Hospital Gazette*. The performance was said to be in the interests of science and for the benefit of the medical profession. However, an "atmosphere"—in the literal as well as in the metaphorical sense—was created by burning incense in the theater, and at the end of the performance "talismans" that were said to be able to induce prophetic dreams were distributed. No charge was made for seats, and refreshments were provided free. The object of this performance was to demonstrate the extent of the influence which the mind was capable of exerting over the body, especially over the functions of the autonomic system. Dr. Bey made no claim to "supernatural" powers. The phenomena about to be exhibited were natural in the sense that they could be cultivated by any one who was prepared to make the necessary sacrifices and possessed the necessary steadfastness of purpose. The fakir was sympathetic to the point of view of medical science in that he is himself a physician, qualified at Constantinople.

On the stage sat a committee of forty physicians, and a further jury of six persons was invited from the audience. Dr. Tahra Bey then appeared in Oriental costume. He knew no English, but frequently addressed the audience in French. Throughout the whole performance he maintained a perfect equanimity, his self-possession contrasting with the tension of a considerable section of the audience. All his movements were made slowly and with dignity. He seemed to dislike applause, and constantly tried to inhibit it, when it tended to break out, with a little gesture of the hand. He explained that at will he could throw himself into a condition of catalepsy by pressing on the carotids and vagi of each side of his neck. The condition was also assisted by swallowing the tongue, an accomplishment acquired by fakirs at the age of 5 years. There would follow after the catalepsy a condition of "lethargy" in which he would enjoy a complete anesthesia to all painful stimuli, the duration of which would be about eight times the duration of the catalepsy. He stood with head lowered and eyes closed, pressed with his thumbs on each side of his neck. His breathing became deeper, and he began to sway. After about a quarter of a minute, he fell back with a guttural sucking sound into the arms of two assistants, his body in a state of rigid opisthotonos. In this condition he was lifted up and placed on scythes; two parallel with each other and about an inch apart lay underneath the broadcast part of his shoulders, and two underneath his heels. These scythes had edges which permitted Dr. Blacker to press his palm on them with considerable force without any danger of cutting the skin, but which nevertheless were distinctly sharp to the touch. On the fakir's abdomen and chest were then placed a block of stone that weighed at least 60 pounds. With a large sledge hammer, an assistant, seemingly with his whole force, struck three very heavy blows on the block of stone. Under the impact, the fakir's body bent like a bow, immediately regaining the rigid opisthotonic position. The fakir was then removed from the scythes, and he gradually regained consciousness.

Dr. Bey then announced that his body was completely and uniformly anesthetic to pain. Without sterilizing them, he thrust *two hat pins* through each cheek, pulling the skin of the cheek very tight in the process. No blood appeared. With the points of both hat pins emerging from his mouth, he walked among the audience moving the hat pins with his tongue. It occurred to some one present that he might have a hole in each cheek similar to the holes in the ears of women who wear earrings, or that he might previously have anesthetized his cheeks with cocaine and epinephrine. A member of the jury then asked the fakir if he would permit him to transfix him with a hat pin. With complete equanimity the fakir replied, "Avec grand plaisir, ou vous voulez." A hat pin was then thrust through the skin of his forearm. Dr. Bey did not appear to feel it, nor did his arm bleed. The fakir then picked up a large pointed knife, and pulling out very tightly the loose skin immediately above his episternal notch, with deliberate screwing movements he transfixed the fold till the point just emerged on the other side. He said he would perform this experiment twice. The first one would be bloodless. In the second, he would allow himself to bleed a little. On withdrawing the knife after the first incision, a vestige of blood—about a drop—appeared at a larger hole, and was wiped off by one of the jury. From the second transfixion, however, made in the same locality, a small trickle of blood ran down on the fakir's chest. He stated that by the end of the evening, both wounds would have healed. There was then produced a broad surface of wood, shaped like a door, through which about 200 ordinary 6 inch nails had been driven. They were more or less rusty and moderately sharp. The fakir then announced that he would lie down on those nails, and allow his assistant to stand on his chest. This process, he stated, would cause him no pain; "au contraire" he said, "j'éprouve une profonde joie." He then walked to the bed of nails, and with eyes raised, slipped off the white cloth garment that covered his shoulders, so that he was naked to the waist. To the sound of tearing linen he then sat down on the nails, and lay at full length on them. One of his assistants, a man of about 8 stone (50 Kg.), then stepped from a chair on his abdomen, where he stood for about three seconds. The fakir then got up. Across his shoulders were two large white wheals, about an inch apart, caused by the scythes, and his back displayed a pattern where the nails had pressed in his skin. At no point was there any bleeding. Each nail had left an impression with a small blue center around which was a narrow area of white skin, itself surrounded by a broader zone of erythema. Dr. Bey then asked leave to retire for ten minutes, as he said, "Je sens que la sensibilité me retourne." A member of the jury was anxious to see whether the faker's cornea was anesthetic to cotton wool. His eyes reacted to touch, and the fakir said that he would now feel pain if his body was further injured, though he experienced no pain from the injuries sustained during the period of postcataleptic anesthesia.

The exhibitions that followed consisted of thought reading and burial. They were less convincing than what had preceded. Dr. Blacker concludes that Dr. Tahra Bey can, at will, induce in himself a condition of cataleptic rigidity, and that this state is followed by one of generalized anesthesia to painful stimuli. For a person of normal sensibility, the experience on the bed of nails would surely have been almost unendurable. Though none of the injuries inflicted were severe, there also seemed to be a basis for the fakir's assertion that he is able locally to control his blood pressure. He was willing to allow any member of the audience to transfix him anywhere he wished. Though the subcutaneous tissues of the forearm are not particularly vascular, a small amount of oozing is to be expected from their transfixion, which did not take place.

Cholecystography.—A stone in the cystic duct or in Hartman's pouch, or scarring of the duct, prevents the entrance of the dye into the gallbladder and no shadow is obtained. —Cade, Stanford: Arris and Gale Lecture, *Lancet*, July 3, 1926.

Medicolegal

Liability for Injuries from Forcible Delivery

(Korman v. Hagen (Minn.), 206 N. W. R. 650)

The Supreme Court of Minnesota says that this was an action to recover damages for the benefit of the plaintiff's child, the femur of whose left leg was fractured and whose nerves controlling the muscles of the right arm were lacerated, producing partial paralysis of the arm, by the manual force exerted by the defendant physician in the alleged negligent and premature delivery of the child. According to the defendant, he ascertained by examination that there was a breech presentation, and he resorted to a forcible delivery only when necessary to save the life of the child; but there was testimony contradicting his findings as to the necessity of making a forcible delivery, which carried the issue of negligence to the jury. Within forty-eight hours after the delivery of the child the defendant was dismissed, and other physicians were called.

This court appreciates the unenviable position in which a physician so often is placed. Here was the agony of the patient, the insistence of her husband and her mother-in-law that the defendant do something for her relief, and the unusual and difficult position in which the child was presented, all of which, no doubt, taxed to the utmost both the judgment and the skill of an attending physician. In such a situation, he ought not to be held for a mere error of judgment or for not selecting the best of several approved methods of procedure. And the law so declares. This court also realizes that, when such judgment and skill are to be weighed by a jury in the presence of a small child who must go through life deformed and handicapped through the physician's alleged negligence, and then, as in this case, by a coincidence of circumstances beyond his control, an opportunity is given counsel adroitly to use a call of the physician to another case as a motive for a forced premature delivery, the physician's best efforts will receive scant consideration. While this court may consider this alleged motive flimsy and unwarranted, and the testimony of the plaintiff's witnesses unreliable, in the state of mind they were when the matters occurred, as compared with the time they came coolly to calculate what incidents might be stated that would tell against the defendant, nevertheless it was for the triers of fact to determine the weight and truth of all the testimony. This court does not think that the defendant could be held legally for either the fracture or the nerve injury, if delivery by force was necessary, even though a medical authority asserts that if the bone of a leg of the fetus, in such a presentation as this, is fractured in getting it down, a lack of skill in the art of delivery is indicated. The fact is that fractures do occur in the case of forced deliveries by the ordinarily skilled and careful practitioner.

The jury was instructed that damages could not be awarded for any shortening of the leg resulting from an interference with the defendant's treatment, whereby the apposition of the bones adjusted by him was disturbed, nor for the disability of the arm resulting from the failure of others properly to treat the Erb's paralysis. This might be more favorable to the defendant than the law permits, although *Carpenter* v. *Blake*, 75 N. Y. 12, seems to justify the charge. However, the correctness of that part of the charge was not presented in this appeal, and this court does not pass thereon. Under the evidence and the charge, this court thinks that damages might properly be assessed against the defendant for all the present defects in the leg, for there was no testimony that proper skill and care were not given the fracture by the physicians who succeeded the defendant. As to the paralysis of the arm, the evidence was very unsatisfactory that the defendant was at all to blame for it. Pressure in severe cases of labor, and this was a severe case, might account for it. Excessive force in pulling on the body in order to extricate the head might also produce it. Besides, it appeared that the physician who superseded the defendant discovered the injury in time sufficient to effect a cure by simple treatment, but none was given. With the evidence in this condition, and under the law given, which the jury was bound to follow, no large sum could be assessed against the defendant for the injury to the arm. Nor could a very large amount be awarded for the shortening of the leg, to which the rest of the frame of the body would no doubt in a great measure adjust itself before the child reached maturity. The amount of the verdict rendered is not stated by the court, which holds it excessive and directs the granting of a new trial unless the consent of the plaintiff be given to the reduction of the verdict to $4,000. At the same time it is suggested that there had been two trials, and it would be for the best interests of the parties if there was an end to the controversy.

Member of School Committee as School Physician

(Barrett v. City of Medford (Mass.), 150 N. E. R. 159)

The Supreme Judicial Court of Massachusetts, in rendering a judgment in favor of the defendant city, says that this was an action to recover for services rendered as school physician, or medical inspector, of that city, for eleven months from Sept. 1, 1923. The plaintiff was by the school committee of the city appointed, in 1917, temporary medical inspector for all the schools, and his appointment was made permanent in 1920. After Sept. 1, 1923, he no longer received a salary for his services as medical inspector, which had been $60 a month, owing to the refusal of the mayor to approve the item in the payroll. The plaintiff nevertheless continued to perform the duties of medical inspector until August, 1924. During all this period he was a member of the school committee, elected every three years, but took no part officially as a member of the committee in his appointment by the committee. The court thinks that a school committee, in the absence of a statute permitting it, cannot elect one of themselves to the salaried office of school physician. The duties he is to perform as physician are incompatible with the supervisory duties which as a member of the committee he should exercise over the incumbent of the office of school physician. Consistently he cannot be master and servant.

Exhibition to Jury of Stub of Arm

(Davis, Agent v. Antol (Ky.), 278 S. W. R. 573)

The Court of Appeals of Kentucky holds, in this action to recover damages for personal injuries, that there was no error in permitting plaintiff Antol to exhibit to the jury the stub of his arm that had been injured and amputated. The court says that this was not a death case wherein the suffering of the deceased and the extent of his injuries play no part, but it was a case in which the party suing survived his injuries, and the extent of his injuries and the consequent suffering and permanent reduction of his power to earn money were directly in issue. To enable the jury to pass intelligently on these questions, there was no better or more appropriate evidence than the injured arm itself.

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Colorado Springs, Sept. 13-18. Dr. Luther C. Peter, N. E. Cor. Chestnut and 20th Streets, Philadelphia, Secretary.
American College of Physical Therapy, Chicago, Sept. 13-17. Dr. R. W. Fouts, City National Bank Building, Omaha, Neb., Secretary.
American Electrotherapeutic Association, Atlantic City, Sept. 8-11. Dr. Richard Kovacs, 223 E. 68th Street, New York City, Secretary.
Idaho State Medical Association, Sandpoint, Sept. 2-5. Dr. J. N. Davis, Kimberly, Secretary.
Michigan State Medical Society, Lansing, Sept. 14-17. Dr. F. C. Warnshuis, Powers Theatre Building, Grand Rapids, Secretary.
Missouri Valley, Medical Society of the, Council Bluffs, Iowa, Sept. 15-17. Dr. Charles Wood Fassett, 115 East 31st St., Kansas City, Mo., Sec'y.
Wisconsin, State Medical Society of, Madison, Sept. 15-17. Mr. J. G. Crownhart, 153 Oneida Street, Milwaukee, Exec. Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to The Journal in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

37: 195-416 (May 15) 1926

Occlusion of Esophagus and Trachea in Crocodilia and Snakes. A. M. Reese, Morgantown, W. Va.—p. 195.
Histologic Changes in Testis of Guinea-Pig During Scurvy and Inanition. B. Lindsay and G. Medes, Minneapolis.—p. 213.
Types of Three Great Races of Man. R. B. Bean, University, Va. —p. 237.
*Visceral Anatomy of Healthy Adults. R. O. Moody and R. G. Van Nuys, Berkeley, Calif., and W. E. Chamberlain, San Francisco. —p. 273.
Energy Production and Transformation in Protoplasm. M. T. Burrows, St. Louis.—p. 289.
*Properties of Gonads as Controllers of Somatic and Psychical Characteristics. IX. C. R. Moore, Chicago.—p. 351.

Study of Visceral Anatomy.—Moody and his associates assert that the anatomy of the viscera based on a study of the dead loses much of its value and gives students many wrong concepts of visceral form, position, and relations. The anatomy of the abdominal viscera should be taught as it is found in the living, not as it is found in the dead. To do such teaching and to carry on research, every department of anatomy should have as a minimum equipment a fluoroscope and one instructor trained to use it. Apparatus for taking roentgenograms would add much to the value of the equipment.

Testis Graft Reactions.—Moore has found that whole rat testes persist after transplantation into normal males, castrated males, normal females and spayed females for periods ranging from one to six and one-half months; sixteen testis grafts have been removed from pregnant or littered females. Moore is of the opinion that Steinach's antagonism hypothesis, if retained at all, must be decidedly modified; as originally conceived, Moore considers it useless and contrary to facts. Testes transplanted into the scrotum may carry on spermatogenesis to completion and produce spermatozoa; such completion of germ cell differentiation has occurred in no other location than the scrotum. Since only early stages of spermatogenesis are found in grafts from other localities, for the reason that the cells produced in mitosis escape into the lumen and degenerate instead of persisting and differentiating into spermatozoa, there is added evidence that the scrotum is necessary for spermatozoon formation. This condition finds its explanation in terms of the function of the scrotum as a local temperature regulator for germ cell differentiation in the testis. Persistence of palpable nodules is no criterion of a functional graft.

American Journal of Ophthalmology, Chicago

9: 321-408 (May) 1926

Intracranial Complications of Chronic Suppurative Otitis Media Seen by Ophthalmologist. R. A. Fenton, Portland, Ore.—p. 321.
Trachoma. J. W. May, Kansas City, Kan.—p. 333.
Edematous Anthrax of Face Resulting in Meningitis. F. Krauss and N. O. Spikes, Philadelphia.—p. 337.
Papillitis, Headache and Mental Depression from Osteoma of Septum. O. Wolfe, Marshalltown, Iowa.—p. 340.
Iridectomy with Winged Incision (Luedde) in Glaucoma. J. Green, St. Louis.—p. 342.
Retrobulbar Neuritis Due to Frontal Sinusitis. L. W. Deichler, Philadelphia.—p. 346.
Heterochromic Cyclitis with Cataract Formation. J. S. Plumer, Philadelphia.—p. 349.
Influence of Protein Therapy on Experimental Staphylococci Infection of Rabbits Cornea. B. W. Key, New York.—p. 351.
Chromatic Test for Dominant Eye. J. I. Pascal, New York.—p. 357.
Chancroid of Eyelid. L. F. Appleman and S. S. Greenbaum, Philadelphia.—p. 358.
Forceps for Positive Fixation of Globe. J. M. Patton, Omaha.—p. 360.

American Journal of Physiology, Baltimore

76: 497-725 (May 1) 1926

*Dye Methods for Determining Blood Volume Tested in Vitro. J. Lindhard, Copenhagen.—p. 497.
*XVI. Effect of Epinephrine on Coronary Circulation. C. M. Gruber and S. J. Roberts, St. Louis.—p. 508.
*Relationship of Phosphate and Carbohydrate Metabolism. III. Effect of Glucose on Excretion of Phosphate in Depancreatized Dogs. J. Markowitz, Toronto.—p. 525.
Innervation of Smooth Muscle. IV. Functional Relations Between Lower End of Esophagus and Stomach of Cat. H. O. Veach, Boston.—p. 532.
*Suprarenal Secretion Produced by Asphyxia. B. A. Houssay and E. A. Molinelli, Buenos Aires.—p. 538.
Effect of Nicotine, Cystosine, Lobeline, Coniine, Piperidine and Quaternary Ammonias on Suprarenal Secretion. B. A. Houssay and E. A. Molinelli, Buenos Aires.—p. 551.
Spectrophotometric Determinations of Bilirubin. C. Sheard, E. J. Baldes, F. C. Mann and J. L. Bollman, Rochester, Minn.—p. 577.
Effect of External Temperature on Second Wind. G. E. Berner, C. C. Garrett, D. C. Jones and R. J. Noer, Philadelphia.—p. 586.
*Epilepsy. III. Influence of General Increase or Diminution of Intracranial Pressure on Susceptibility of Animals to Convulsive Seizures. C. A. Elsberg and F. H. Pike, New York.—p. 593.
Study of Vago-Enteric Mechanism by Means of Nicotine. J. E. Thomas and A. Kuntz, St. Louis.—p. 598.
Study of Gastro-Intestinal Motility in Relation to Enteric Nervous System. J. E. Thomas and A. Kuntz, St. Louis.—p. 606.
Nature of Urinary Glucose. W. C. Austin and T. E. Boyd, Chicago. —p. 627.
*Blood Clotting Studies in Hemophilia. C. A. Mills, Cincinnati.—p. 632.
Explanation of Blood Clotting Change Observed in Peptone Shock in Dog. C. A. Mills, Cincinnati.—p. 642.
Manner of Action of Protein Fraction of Tissue Fibrinogen as Blood Anticoagulant. C. A. Mills, Cincinnati.—p. 651.
Studies on Physiology of Reproduction in Birds. XXI. Blood Calcium Changes in Reproductive Cycle. O. Riddle and W. H. Reinhart, Cold Spring Harbor, N. Y.—p. 660.
Rabbit Method of Standardizing Insulin. M. Sahyun and N. R. Blatherwick, Santa Barbara, Calif.—p. 677.
Identity of Muscle Hemoglobin and Blood Hemoglobin. R. P. Kennedy and G. H. Whipple, Rochester, N. Y.—p. 685.
Hemoglobin of Striated Muscle. I. Variations Due to Age and Exercise. G. H. Whipple, Rochester, N. Y.—p. 693.
Id. II. Variations Due to Anemia and Paralysis. G. H. Whipple, Rochester, N. Y.—p. 708.

Determining Blood Volume in Vitro.—A report of test experiments regarding the dye methods for determining the blood volume is given by Lindhard. In all the experiments recorded, vital red has been used. It is shown that bloods from different species behave in a quite different manner. It is shown that dye solution may be added repeatedly to the same sample of blood without any inconvenience; when only a sample of blood is drawn for control before each injection of dye solution, the experiment as well as the calculation is carried out in the usual manner.

Effect of Epinephrine on Circulation.—From experiments with epinephrine on the coronary circulation, Gruber and Roberts conclude that the sympathetic nervous system supplies both vasodilator and vasoconstrictor fibers to the coronary circulation of the heart.

Glucose and Phosphorus Metabolism.—Markowitz found that the administration of glucose to fasting depancreatized dogs that have been deprived of insulin for several days does not cause changes in the phosphorus content of three hour urine fractions similar to those observed in normal animals.

Asphyxia.—Houssay and Molinelli conclude that asphyxia acts on the central nervous system, and the stimulus is transmitted through the splanchnics.

Intracranial Pressure and Epilepsy.—Elsberg and Pike assert that variations in intracranial pressure have a decided effect. It is suggested that the benefit from starvation in the treatment of some cases of epilepsy is due to some extent at least to the decrease in intracranial pressure consequent on the diminution in the fluid intake. Unilateral convulsive seizures—the so-called jacksonian epilepsy—may be due to a considerable degree to localized variations in intracranial pressure.

Blood Clotting in Hemophilia.—Experiments done by Mills show that peptone injection in the dog calls forth a marked increase in the thrombolytic power of the dog's serum (i. e., the antithrombin of Howell). Peptone added to serum in vitro just as markedly reduces the thrombolytic power of normal serum and of serum from peptone plasma. The response of the dog to peptone injection, with the excess production of bodies capable of uniting with the peptone, seems to be similar to such typical immune reactions as the toxin-antitoxin reaction, except that the time required is only a few minutes.

American Journal of Public Health, Albany, N. Y.

16: *451-555 (May) 1926*

Need for Trained Personnel. J. A. Ferrell, New York.—p. 451.
Itinerant Conferences: Standards of Examination. J. H. M. Knox, Jr., Baltimore.—p. 465.
Eliminating Source of Error in Laboratory Diagnosis of Rabies. E. K. Borman, Lexington, Ky.—p. 467.
Why New Mexico Nurses Cooperate in Maternity and Infancy Work. D. R. Anderson, Santa Fe, N. M.—p. 473.
Increase in Cancer Mortality. J. W. Schereschewsky, Boston.—p. 475.
Birth, Stillbirth and Death Registration. S. L. Howard, Springfield, Ill. —p. 478.
Sewage Treatment for Golf Clubs. F. W. Jones and G. B. Gascoigne, Cleveland.—p. 481.
Training Sanitarians in Mexico City. S. Bermudez, Mexico City, Mexico.—p. 491.
Lactose Fermenting Bacteria. F. Berry and L. F. Ey, Columbus, Ohio. —p. 494.
Anaerobes in Sewage. F. E. Greer, Chicago.—p. 500.
Pneumonia from Public Health Viewpoint. C. J. Vaux and H. J. Benz, Pittsburgh.—p. 502.

American Journal of Roentgenology and Radium Therapy, New York

15: 399-496 (May) 1926

Human Pleura Pulmonalis: Relation to Blebs and Bullae of Emphysema. W. S. Miller, Madison, Wis.—p. 399.
Lung Abscess. R. A. Kern, Philadelphia.—p. 407.
Roentgen-Ray Diagnosis of Lung Abscess. H. K. Pancoast, Philadelphia. —p. 410.
Bronchoscopic Treatment of Lung Abscess. G. Tucker, Philadelphia. —p. 419.
Surgical Aspects of Lung Abscess. G. P. Muller, Philadelphia.—p. 421.
Hilum in Tuberculosis. A. G. Schnack, Honolulu, T. H.—p. 424.
Use of Iodized Oil (Lipiodol and Iodipin): Roentgen-Ray Diagnosis of Spinal Lesions. E. A. Schmidt, Denver.—p. 431.
Radiation Treatment of Malignant Disease. G. W. Grier, Pittsburgh. —p. 436.

American Journal of Tropical Medicine, Baltimore

6: 167-239 (May) 1926

*Mosquito Species Control of Malaria. S. T. Darling, Baltimore.—p. 167.
Prevalence and Distribution of Yellow Fever Mosquito, Aëdes Aegypti (Linn.), in Venezuela. L. H. Dunn, New York.—p. 181.
*Quartan Malaria in Low Coastal Regions of State of Rio de Janeiro, Brazil. N. C. Davis and M. F. Boyd, New York.—p. 195.
*Isolation and Cultivation of Herpetomonas Muscae-Domesticae. R. W. Glaser, Princeton, N. J.—p. 205.
Common Picture of Sprue, Pernicious Anemia and Combined Degeneration. A. C. Reed and H. A. Wyckoff, San Francisco.—p. 221.

Malaria Control in Java.—Darling points out that a preliminary field survey of a region in which there was very severe endemic malaria in the rice fields of the Tjihoea Vlaagte in Java showed that *A. aconita*, the anopheline carrier of malaria, did not breed in the water of the rice fields that were under cultivation. The selected breeding places were neglected grassy irrigation ditches and grassy sodden rice paddies that were lying fallow. Based on these facts, a notable reduction in the amount of malaria was made by instituting special regulations requiring the people regularly to clean and burn the irrigation ditches and to lay dry their rice fields after harvest, also to regulate the amount of water used for irrigation purposes, avoiding its excessive use.

Malaria in Brazil.—Studies in certain areas within the low, coastal region of the state of Rio de Janeiro, Brazil, have revealed a very small number of infections with *Plasmodium malariae*. The data indicate that the quartan rate probably fluctuates in the same manner as that of the other malaria infections. The persistence of *P. malariae* blood infections during months of low fever incidence has been verified by Davis and Boyd. The geographic distribution of the *P. malariae* infections reveals the presence of definite foci, which consistently produce new cases each year.

Cultivation of Herpetomonas.—A method is described by Glaser whereby a flagellate protozoan *(Herpetomonas muscae-domesticae)*, parasitic in the alimentary tract of adult house flies, can be freed from the intestinal flora and grown indefinitely in pure culture on a medium prepared from full grown silkworms. Additional proof is furnished that the genus *Herpetomonas* is closely related to the genus *Leishmania*.

American Review of Tuberculosis, Baltimore

13: 393-478 (May) 1926

Chemical Composition of Active Principle of Tuberculin. I. Nonprotein Medium Suitable for Production of Tuberculin in Large Quantity. E. R. Long and F. B. Seibert, Chicago.—p. 393.
Id. II. Precipitation with Acetic Acid and Other Acids. E. R. Long and F. B. Seibert, Chicago.—p. 398.
Id. III. Experiments on Dialysis. F. B. Seibert and E. R. Long, Chicago.—p. 404.
Id. IV. Ammonium-Sulphate Precipitation of Proteins of Tuberculin. F. B. Seibert and E. R. Long, Chicago.—p. 408.
Id. V. Effect of Proteolytic Enzymes on Tuberculin Proteins and Activity of Tuberculin. F. B. Seibert, Chicago.—p. 431.
Id. VI. Acid Hydrolysis of Tuberculin. E. R. Long, Chicago.—p. 441.
Id. VII. Evidence That Active Principle Is Protein. E. R. Long and F. B. Seibert, Chicago.—p. 448.
Tuberculosis. VII. Active Principles of Tuberculin Prepared from Nonprotein Substrates. F. Eberson, San Francisco.—p. 454.
Active Immunization of Guinea-Pigs by Tuberculous Urinary Antigens. J. J. Enright, Pittsburgh.—p. 463.
*Bactericidal Action of Ultraviolet Light on Tubercle Bacillus. H. H. Howze, Little Rock, Ark.—p. 470.
*Radio and Tuberculosis Patient. W. H. Rosenau, Colorado Springs. —p. 475.

Bactericidal Action of Ultraviolet Rays on Tubercle Bacillus.—From the results obtained experimentally, it is concluded by Howze that the irradiations of the mercury vapor quartz lamp are bactericidal for the tubercle bacillus after an exposure of five minutes at a distance of 10 inches from the burner. No attempt is made to explain this bactericidal action.

Radio and Tuberculosis Patient.—The indiscriminate and unrestricted use of the radio for the patient affected with tuberculosis in Rosenau's opinion is unwise. The reaction of each individual patient following the use of the radio should be noted. The patients who react unfavorably should not be allowed its use. The patient should be discouraged in the logging of many stations. He should content himself with easily available reception. He should be told to avoid "listening in" to exciting plays and the broadcasting of competitive games in which he is keenly interested. If these precautions are taken, the radio will remain a boon to the sick, and not an unfavorable inhibiting influence to convalescence.

Annals of Clinical Medicine, Baltimore

4: 695-771 (March) 1926

*Splenic Enlargement as Measure of Malaria. S. T. Darling, Baltimore. —p. 695.
*Ephedrine in Treatment of Vascular Hypotension and Bronchial Asthma. T. G. Miller, Philadelphia.—p. 713.
*Smallpox Without Eruption Following Blood Transfusion. J. R. Blalock, Detroit.—p. 722.
*Occurrence of Abnormal Leukocytes in Blood of Patient with Jaundi (Infectious Mononucleosis—Glandular Fever). R. D. Mackey a E. G. Wakefield, Washington, D. C.—p. 727.
Relation of Public to Medicine. W. Cunningham, Platteville, W —p. 731.
*Free Ball Thrombus Associated with Mitral Stenosis. E. B. Potter, A Arbor, Mich.—p. 736.
*Chronic Endocarditis Associated with Defects of Septum Ventriculoru C. A. McIntosh, Ann Arbor, Mich.—p. 748.
*Torula Meningitis. F. B. Lynch, Jr., and E. Rose, Philadelphia.—p. 75

Splenic Enlargement as Measure of Malaria.—In region in which malaria is endemic, as in certain oriental countries and when the anemia is oftentimes very severe, an interesting correspondence was observed by Darling between th size of the spleen and the amount of anemia. In these highl endemic regions the spleens often become enormous, ver frequently extending to the umbilicus and sometimes int the pelvis; this condition is found in adults as well as i children. In one group of oriental people examined som years ago in a district in Java, an almost perfect correspondence was found to exist between the size of the spleen and the degree of anemia when the average hemoglobin of the spleen group was considered. The parallelism between the increments in spleen mass or volume and the degree of anemia is very striking.

Ephedrine in Treatment of Hypotension and Asthma.—Experimental evidence is reviewed by Miller, which indicates that ephedrine has sympathomimetic actions similar to epinephrine; in particular, it raises blood pressure and dilates the bronchial muscle. Clinical evidence is presented to show that it is effective in overcoming congestion of the nasal mucous membrane, in elevating the lowered blood pressure of certain disease states and in relaxing the bronchial spasm responsible for asthma. Its chief advantages over epinephrine lie in its more permanent action and in the fact that it can be administered effectively by mouth. Its practical value in the management of patients with vascular hypotension is still undetermined, but the work here reported would seem to indicate definite value in congestive nasal conditions and in bronchial asthma.

Smallpox Following Blood Transfusion.—Blalock reports a case of advanced pernicious anemia with mental changes and a rightsided hemiplegia in which a blood transfusion was done by the citrate method. There was no immediate reaction. Two days later it was learned that the donor had developed the eruption of smallpox on the day following the transfusion. He had a mild type of the discrete pustular form of the disease and made an uneventful recovery. No history giving a clue as to the source of contagion could be obtained. He had never been vaccinated. The recipient showed a successful vaccination scar on his left arm. The date of vaccination could not be learned because of his mental condition. He was again vaccinated on the third day following transfusion. On admission, he had been vaccinated as a routine. Both vaccinations were unsuccessful. His progress was without change until the tenth day following transfusion. On this day he complained of headache. Pain on swallowing, epistaxis and fever were noted in the course of the next three days. On the fourth day, a rash appeared on his chest, in his axillae, over his cheeks and abdomen. It was erythematous, for the most part confluent and morbilliform in type, giving to the skin an indistinct blotchy appearance. The color faded on pressure. There was no adenitis, coryza, or lacrimation. No Koplik's spots could be found. The rash began to fade on the sixteenth day, and on the seventeenth had disappeared, followed by no desquamation.

Glandular Fever with Obstructive Jaundice.—A case of glandular fever with obstructive jaundice is reported by Mackey and Wakefield. In view of the fact that enlargement of abdominal lymph nodes has been observed many times in glandular fever, the authors think that the most probable theory as to the cause of jaundice in this case is lymph node enlargement, which occluded the common duct. The most probable anatomic location of the obstruction would be swelling of the lymph nodes in Calot's triangle.

Free Ball Thrombus with Mitral Stenosis.—Many features in the case reported by Potter closely correspond to those noted in previously reported cases: (1) "Buttonhole" mitral stenosis as the underlying lesion; (2) location of the thrombus in the left auricle, as in all cases reported, except one; (3) embolism with pulmonary infarction; (4) sensory disturbances and gangrene of the extremities, and (5) occurrence of the condition in a female. It is of special interest, however, that in this case two thrombi were found in the left auricle, one free and the other firmly attached by a pedicle to the wall of the auricular appendage.

Carcinoma of Rectum: Intestinal Obstruction; Chronic Endocarditis; Defective Septum Ventriculorum.—McIntosh's patient presented symptoms of chronic intestinal obstruction. An obstructing, inoperable carcinoma of the rectum was discovered. A left inguinal colostomy was performed. The patient died on the eighth day postoperative of general peritonitis. Her condition being an urgent surgical one, a detailed history of cardiac symptoms was not recorded, save to note that there was no advanced heart disease. It was stated, however, that she had had attacks of palpitation, accompanied by a slight degree of dyspnea, during the last few years. At necropsy, the heart was found rather small, of normal shape, and the left ventricle was in firm rigor. The superior and inferior venae cavae entered by a common orifice. The cavity was crossed by an aberrant strand of endocardium which extended from the anterior portion of the interauricular septum to the anterior wall at the attachment of the auricular appendage. The foramen ovale was functionally closed by the valvula foraminis ovalis, but anatomically a large orifice could be demonstrated admitting the index finger. The right ventricle was much smaller than usual. The ventricular space was in a large measure consumed by relatively large muscular columns and trabeculae. Arising from the conus arteriosus, immediately posterior to the moderator band, was a greatly hypertrophied chorda tendinea which became branched at its summit and was attached to the infundibular cup of the tricuspid valve. The anomaly of interest was situated about 1 cm. beneath the right anterior aortic cusp and just anterior to the undefended space. Here were found two small foramina. One opening led into a patent lumen in the substance of the enlarged chorda tendinea originating from the conus in the right ventricle. The probe finally passed into the right side of the heart through a small orifice situated on the anterior surface of this funnel shaped structure. The other opening ended blindly beneath a thickened endocardium immediately beneath the short infundibular cusp of the tricuspid valve.

Torula Meningitis.—A seventeenth case of infection of the central nervous system by *Torula histolytica* is reported by Lynch and Rose, and the morphology and cultural characteristics of the organism described. The classification of yeasts is briefly analyzed, and the reasons given for retaining the name *Torula*.

Archives of Internal Medicine, Chicago

37: 597-732 (May 15) 1926

- *Blood Pressure in Women as Influenced by Sex Organs. W. C. Alvarez and A. Zimmermann, San Francisco.—p. 597.
- Exophthalmic Goiter: Roentgenotherapy. B. J. Sanger, New York.—p. 627.
- *Occupational Disease Among Zinc Workers. C. P. McCord and A. Friedlander, Cincinnati.—p. 641.
- *Blood in Epidemic Smallpox. K. Ikeda, Minneapolis.—p. 660.
- *Gastric Secretion in Diabetes Mellitus. B. D. Bowen and A. H. Aaron, Buffalo.—p. 674.
- *Hemoglobin, Color Index, Saturation Index and Volume Index Standards. E. E. Osgood, Portland, Ore.—p. 685.
- *Estimation of Transverse Cardiac Diameter. F. J. Hodges and J. A. E. Eyster, Madison, Wis.—p. 707.
- Effect of Lead and Radium on Mature and Immature Erythrocytes. H. E. Pearse, Boston.—p. 715.
- Antepartum and Postpartum Blood Changes in Young Mothers. I. Handelman, A. Rose and C. P. Sherwin, New York.—p. 725.

Blood Pressure in Women.—The evidence presented by Alvarez and Zimmermann supports the theory that the "essential" type of hypertension is a bodily peculiarity, inherited equally by girls and boys, but ordinarily repressed in women before the menopause by the ovarian or other related secretions. When the pelvic organs are subnormal, the disease may appear in women as early as it does in men.

Occupational Disease Among Zinc Workers.—In a small galvanizing plant McCord and Friedlander have detected widespread gastro-intestinal conditions, varying from gastroenteritis, in the younger workers, to well established gastric and duodenal ulcers among workers employed for a long time. Twelve out of fifteen workers employed seven years or longer have presented severe gastro-intestinal lesions. In a second plant, in which all employees are new at this work (less than six years) and in which the general work conditions are better and exposure to trade process fumes is much less, no cases of this gastro-intestinal disease have been found.

Blood in Epidemic Smallpox.—Examination made by Ikeda of the blood in approximately 200 cases of smallpox, representing all forms and stages of the disease during an epidemic, shows characteristic findings which, if properly interpreted, are of definite diagnostic and prognostic value. The earlier the rise of the platelets, the sooner the approach of the desiccation period, prognosticating a shorter course of the disease. A definite leukopenia during the maculopapular stages indicates, as a rule, a mild discrete form. A progressive leukocytosis with an early high polynucleosis predicts a severe form. The higher the values, the more probable the fatal outcome. The early appearance of normoblasts, basophilic stippling and polychromatophilia, without evident anemia, are unfavorable signs. It invariably means the purpuric form of smallpox. Condensation and fragmentation of mature leukocytes are found only in the purpuric form of smallpox. They appear comparatively early in the primary type of purpuric smallpox and are usually accompanied by pathologic normoblasts, basophilic stippling and polychromatophilia, without visible anemia. A rapidly progressive, absolute lymphocytosis is a constant characteristic of purpuric smallpox. Scarlatinal and other exanthems, infectious purpura and toxic rash with petechiae, can be definitely differentiated from the purpuric form of smallpox during its erythematous stage by these blood findings.

Gastric Secretion in Diabetes Mellitus.—Fractional gastric analyses have been made by Bowen and Aaron on sixty-nine diabetic patients. A complete absence of free hydrochloric acid was found in twenty patients. Of these, ten had diarrhea while no cases of diarrhea were found in which the patients had free hydrochloric acid. The artificial use of dilute hydrochloric acid did not appear to affect the diarrhea in four patients, three of whom died, one having marked steatorrhea. In the other six patients, the diarrhea stopped coincidently with the use of the acid, but did not reappear when the acid was withdrawn. The patients, however, in all instances took the acid over a period of several months. There was no reappearance of free hydrochloric acid in one case that was subsequently studied. Of the twenty patients who had achlorhydria, the average duration of the diabetes was 6.5 years, and diabetes was severe in every case at the time of observation. The duration in the normal group was 2.8 years, while the gastric subacidity group held the middle position, with an average of 3.6 years. There was no essential difference in the average ages of the patients in the three groups. In an analysis of the complication factors in each case, it does not appear that the conditions that are known to produce achlorhydria in nondiabetic subjects are more prevalent in the achlorhydria group. From the results of these observations, it seems justifiable to the authors to presume that achlorhydria may be the result of long standing or severe diabetes.

Determination of Standards for Normal Blood.—The blood of 137 men from 19 to 30 years of age has been studied by Osgood for the purpose of establishing standards for the normal averages and determining the range of variation in normal findings. The term hemoglobin coefficient is proposed as a substitute for "the amount of hemoglobin in grams per hundred cubic centimeters of blood calculated to a red cell count of 5 million per cubic millimeter." This is the figure used as 100 per cent hemoglobin in calculating color indexes. Similarly, the term volume coefficient is proposed to take the place of "the volume of packed red cells in cubic centimeters in 100 cc. of blood calculated to a red cell count of 5 million per cubic millimeter." This is the figure used as 100 per cent cell volume indexes. Osgood proposes a method of calculating saturation indexes by dividing the color index by the volume index. A tentative classification of anemias on the basis color index, volume index and saturation index is suggested.

Transverse Cardiac Diameter.—New tables are presented by Hodges and Eyster for the estimation of the normal transverse cardiac diameter in man. These tables are based on the following prediction formula: Transverse diameter in millimeters equals age 0.1094 — stature 0.1941 + weight 0.8179 + the constant 95.8625.

Archives of Ophthalmology, New Rochelle, N. Y.

55: 213-318 (May) 1926

New Technic for Expression of Cataractous Lens in Capsule. H. Smith, New Eltham, England.—p. 213.
Case of Metastatic Intra-Ocular Mycosis. F. H. Verhoeff, Boston.—p. 225.
Case of B. Tularense (Squirrel Plague) Conjunctivitis. D. T. Vail, Jr., Cincinnati.—p. 235.
Acuity Apparatus with Attachments for Testing Light and Color Sense and for Color Mixing. C. E. Ferree and G. Rand, Bryn Mawr, Pa. —p. 245.
[illegible]ts of Intracapsular Cataract Extraction. A. Knapp, New York.
[illegible] Findings in Lesions in Different Parts of Reflex Arc. [illegible], Philadelphia.—p. 262.

Archives of Otolaryngology, Chicago

3: 403-480 (May) 1926

*Lipiodol in Diagnosis of Bronchopulmonary Lesions by Bronchoscopic Method. D. H. Ballon, Montreal.—p. 403.
Bronchoscopic Removal of Safety-Pin. C. Jackson, Philadelphia.—p. 423.
Labyrinthine Tonus and Variations in Intracranial Pressure. L. M. Hubby, New York.—p. 429.
Mastoiditis Without Apparent Otitis Media: Two Cases. F. K. Hansel, St. Louis.—p. 433.
Diathermic Studies on Eye and Ear. A. R. Hollender and M. H. Cottle, Chicago.—p. 438.
*Acute Mastoiditis, Lateral Sinus Thrombosis and Pyemia. S. D. Greenfield, New York.—p. 444.
Fibro-Adenolipoma of Tonsil. L. J. Friend, Merrill, Wis.—p. 448.
Accidental Rupture of Ethmoid Roof with Subsequent Recovery. J. G. Hunt, London, Ont.—p. 452.
New Instrument for Treatment of Chronic Catarrhal Otitis Media with Superheated Air. J. Guttman, New York.—p. 453.
*Tracheo-Esophageal Fistula Due to Carcinoma of Esophagus. M. C. Myerson, New York.—p. 456.
Tumors of Nose and Throat. G. B. New, Rochester, Minn.—p. 461.

Lipiodol in Diagnosis of Bronchopulmonary Lesions.—The bronchoscopic method of injecting lipiodol, Ballon states, is safer and more satisfactory than any other method by virtue of the added diagnostic advantage from having observed by direct vision the actual condition in the bronchi and lungs. It is a valuable diagnostic aid in cases of bronchial stenosis, lung abscess, bronchiectasis and pulmonary tuberculosis. The thoracic surgeon has a useful means of deciding whether or not to operate, the extent of operative intervention, and the prognosis. New growths of the bronchus must be diagnosed bronchoscopically. Lipiodol is only an aid. Studies of the act of coughing illustrate how, during a spasm of coughing, the lipiodol or infected material could be projected from the lower lobes and disseminated throughout the entire lung even at the apexes.

Lateral Sinus Infection with Joint Metastases.—Greenfield's case bears out a well known clinical observation that patients with lateral sinus infection in which metastases to the joints and superficial tissues occur are more apt to survive. His patient had involvement of the left hip joint, the left ankle joint and the soft tissues about the right femur.

Tracheo-Esophageal Fistula: Vinson's Sign.—In the case of carcinoma of the esophagus reported by Myerson, the observation of Vinson was the only finding which demonstrated the presence of a tracheo-esophageal fistula. Vinson noted that, in cases of carcinoma of the esophagus which have perforated into the trachea or the bronchus, a swallowed thread would find its way through the fistula and keep twisting itself around the tracheo-esophageal wall by successively passing through the esophagus after emerging from the larynx.

Bostoń Medical and Surgical Journal

194: 964-1012 (May 27) 1926

Three Common Causes of Maternal Mortality. R. L. De Normandie, Boston.—p. 963.
Eye and Internist. M. Fremont-Smith, Boston.—p. 968.
*Effects of Sodium Tetraiodophenolphthalein in Complete Biliary Obstruction. S. J. Maddock, New York and L. R. Whitaker, Boston.—p. 973.
*Experiences with Cholecystography. J. D. Camp, Boston, R. J. Reeves, Paulsboro, N. Y., and H. Field, Jr., Boston.—p. 976.
Acrodynia: Six Cases. W. Powell, New Haven, Conn.—p. 980.
Copper Content of Distilled Liquor on Sale in Massachusetts. H. C. Lythgoe, B. O. Berry and S. H. Hall, Boston.—p. 984.
Difficulties Met With in Interpretation of Trends of Cancer Mortality. H. L. Lombard and C. Doering, Boston.—p. 988.

Sodium Tetraiodophenolphthalein for Cholecystography.—Experiments were made by Maddock and Whitaker to ascertain the effect of an intravenous injection of sodium
tetraiodophenolphthalein in cases of obstruction of the com-
mon bile duct. In complete obstruction, no shadow of the
gallbladder is obtainable with sodium tetraiodophenol-
phthalein. Normal animals after intravenous injection of
sodium tetraiodophenolphthalein excrete small amounts in
the urine and large amounts in the feces. Animals with
complete biliary obstruction, on the other hand, excrete con-
siderable amounts in the urine and also large amounts in
the feces. Probably on account of this vicarious elimination,
the lethal dose of the drug in animals with complete biliary
obstruction proves to be only from 20 to 30 per cent below

that for normal animals. This dose is relatively per kilogram from four to five times that necessary to produce a shadow of the gallbladder in man. Furthermore, the injury to the liver produced by sublethal doses, though somewhat more severe in obstruction than in normal animals, is readily repaired. In all probability, then, there need be no fear of fatal outcome from the intravenous use of sodium tetraiodophenolphthalein for cholecystography in a patient who might happen to have a complete biliary obstruction.

Cholecystography.—A review of the experiences with cholecystography in a series of 475 cases is presented by Camp, Reeves and Field. Both the intravenous and oral methods were used. Sodium tetrabromphenolphthalein, when given intravenously, produced such a reaction in the patient that its use in this manner was not considered safe. Sodium tetraiodophenolphthalein was given intravenously without a severe reaction in seventy-two cases. About one third of these patients experienced some nausea or vomiting. Sodium tetraiodophenolphthalein in plain gelatin capsules given by mouth was used in 334 cases. Sixty-seven per cent of these patients experienced some nausea; 31 per cent complained of varying degrees of vomiting. The oral administration of sodium tetraiodophenolphthalein in coated or hardened capsules and pills did not give consistent results. Many of these failed to dissolve, and the resulting shadows were not reliable. Their use did not eliminate nausea and vomiting.

Johns Hopkins Hospital Bulletin, Baltimore

38: 327-388 (May) 1926

Heparin-Plasma as Stock-Plasma for Tissue Cultures. E. C. Craciun, Baltimore.—p. 327.
*Bismuth Poisoning Following Oral Administration of Bismuth Subnitrate. W. H. Resnik, Baltimore.—p. 333.
Atretic Follicles in Ovary of Rat, Mouse and Rabbit: Significance of Basement Membrane in Determining Source of Origin of Interstitial Cells. W. V. Wilkerson, Richmond, Va.—p. 339.
Chorio-Angiofibroma (Chorio-Angioma): Study of Six Hundred Placentas. R. S. Siddall, Detroit.—p. 355.
Apocrine Sweat Glands in White and Negro Men and Women. H. Homma, Baltimore.—p. 365.
*Case of Influenza Bacillus Endocarditis. E. H. Oppenheimer, Baltimore.—p. 372.
Modified Leukocyte Tumor of Rat. W. H. Lewis and B. Brũda, Baltimore.—p. 376.

Bismuth Subnitrate Causes Poisoning.—A case is reported by Resnik in which bismuth poisoning followed administration of bismuth subnitrate by mouth. In a period of five days the patient took 30 Gm. of bismuth subcarbonate, and no untoward symptoms were observed. About a month later, the woman returned with new symptoms. The important symptoms were a bluish-black discoloration of the gums, tongue and buccal mucosa, with slight ulceration, moderate anemia, basophilic stippling of the erythrocytes, with tenderness and swelling of the parotid glands. There were also abdominal colic and evidences of a mild peripheral neuritis, but the dependence of these symptoms on bismuth poisoning is questionable. The patient recovered.

Influenza Bacillus Endocarditis.—Oppenheimer's case, while caused by the Pfeiffer bacillus, clinically showed the protracted course, cardiac disease, splenomegaly, hemorrhagic nephritis, eruption, fever and clubbing of the digits, with an onset suggestive of a cerebral accident so characteristic of *Streptococcus viridans* disease. Anatomically, the type of the vegetations on the chronically diseased and thickened valves, the widespread petechiae, infarcts and the embolic nephritis fit in detail into the same picture.

Journal of Biological Chemistry, Baltimore

68: 225-497 (May) 1926

Separation of Histidine and Arginine. H. B. Vickery and C. S. Leavenworth, New Haven, Conn.—p. 225.
Oxygen, Acid and Base Combining Properties of Blood. II. Preparation of Crystalline Iso-Electric Hemoglobin by Electrodialysis of Red Blood Cells. W. C. Stadie and E. C. Ross, Philadelphia.—p. 229.
Solubility of Calcium in Serum. L. Irving, San Francisco.—p. 239.
Titration of Organic Acids in Urine. W. W. Palmer, New York.—p. 245.
Stability of Evaporated Milk During Sterilization. A. G. Benton and H. G. Albery, Washington, D. C.—p. 251.
Hydrolysis of Sucrose by Invertase in Presence of Alpha-Methyl Glucoside. II. J. M. Nelson and C. I. Post, New York.—p. 265.
Racemization. III. Action of Alkali on Glycyl-Levoalanyl-Glycine and Glycyl-Glycyl-Levoalanyl-Glycine. P. A. Levene and M. H. Pfaltz, New York.—p. 277.
Plant Phosphatides. II. Lecithin, Cephalin and So-Called Cuorin of Soy Bean. P. A. Levene and I. P. Rolf, New York.—p. 285.
Magnesium Metabolism on Purified Diets. G. Medes, Minneapolis.—p. 295.
Residual Reduction of Blood. R. Ege, Copenhagen.—p. 317.
Id. D. D. Van Slyke and A. Hiller, New York.—p. 323.
Effect of Long Continued Administration of Parathyroid Extract on Excretion of Phosphorus and Calcium. I. Greenwald and J. Gross, New York.—p. 325.
Effect of Temperature on Metabolism, Particularly That of Protein. G. E. Youngburg and M. W. Finch, Buffalo.—p. 335.
Changes in Blood Composition of Rabbits Fed on Raw Soy Beans. A. A. Horvath, Peking.—p. 343.
Lipoid Excretion. III. Fecal Lipids. W. M. Sperry, Rochester, N. Y.—p. 357.
Animal Calorimetry. 31. Respiratory Metabolism in Phlorhizin Diabetes After Glucose Ingestion. M. Wierzuchowski, New York.—p. 385.
Scyllitol from Flowering Dogwood (Cornus Florida). R. M. Hann and C. E. Sando, Washington, D. C.—p. 399.
Inositol from Blackberry (Rubus Argutus Link) and Flowering Dogwood (Cornus Florida). C. E. Sando, Washington, D. C.—p. 403.
Coloring Matter, Quercimeritrin, from Double Chrysanthemum-Flowered Sunflower (Helianthus Annuus). C. E. Sando, Washington, D. C.—p. 407.
Configurational Relationship of Beta-Hydroxybutyric Acid and Propylene Glycol. P. A. Levene and A. Walti, New York.—p. 415.
Rotatory and Reducing Values of Glucose as Influenced by Addition of Muscle Tissue and Insulin in Vitro. J. R. Paul, Philadelphia.—p. 425.
Investigations into Standardization and Calibration of Collodion Membranes: I. C. Lundsgaard and S. A. Holbøll, Copenhagen.—p. 439.
Carbohydrate Metabolism. VI. Determining Presence of New Glucose in Various Biologic Fluids. C. Lundsgaard and S. A. Holbøll, Copenhagen.—p. 457.
Id. Transformation of Liver Glycogen into Glucose in Vitro. C. Lundsgaard and S. A. Holbøll, Copenhagen.—p. 475.
Id. VIII. Action of Liver Tissue and Insulin on Glucose in Vitro. C. Lundsgaard and S. A. Holbøll, Copenhagen.—p. 485.

Journal of General Physiology, Baltimore

9: 603-714 (May 20) 1926

Physiologic Ontogeny. A. Chicken Embryos. VIII. Accelerations of Integration and Differentiation During Embryonic Period. H. A. Murray, Jr., Cambridge, England.—p. 603.
Id. IX. Iodine Reaction for Quantitative Determination of Glutathione in Tissues as Function of Age. H. A. Murray, Jr., Cambridge, England.—p. 621.
Shape of Mammalian Erythrocyte and Its Respiratory Function. II. E. Ponder, Edinburgh.—p. 625.
Latent Period in Action of Copper on Respiration. S. F. Cook, Cambridge, Mass.—p. 631.
Enzyme Action. XXXV. Lipase Actions of Extracts of Tissues of Rabbits at Different Ages. H. M. Noyes, K. G. Falk and E. J. Baumann, New York.—p. 651.

Journal of Urology, Baltimore

15: 409-503 (May) 1926

*Acute Changes in Rabbit's Kidney Produced by Ligating Ureter. H. F. Helmholz and R. S. Field, Rochester, Minn.—p. 409.
*Problems in Renal Surgery. H. G. Bugbee, New York.—p. 431.
Dilatation of Ureter with Rubber Bags in Treatment of Ureteral Calculi. R. L. Dourmashkin, New York City.—p. 449.
Contracture of Neck of Bladder. H. Rubritius and O. Schwarz, Vienna.—p. 461.
Molecular Structure of Plant Fibers Determined by Roentgen Rays. O. L. Sponsler, Los Angeles.—p. 677.
Kinetics of Osmotic Swelling in Living Cells. M. McCutcheon and B. Lucke, Philadelphia.—p. 697.
Effect of Hydrogen Ion Concentration on Swelling of Cells. B. Lucke and M. McCutcheon, Philadelphia.—p. 709.

Changes in Kidney Produced by Ligating Ureter.—Helmholz and Field made a study of the differential pathologic anatomy of hematogenous and ascending infections of the kidney after occlusion of the ureter for from one hour to twenty-eight days. The relation of these experiments to the pathologic changes of pyelitis in man is discussed. It appears that certain hemorrhages (evidence of which is found after death) in the pelvis of the kidney following obstruction of the ureters may be attributed to pressure and not necessarily to infection. The formation of diverticula of the pelvis might give rise to a sterile pyuria that persists for a long time. The products of acute inflammation can be removed so rapidly as to leave practically no trace after a period of fourteen days. The presence or absence of infection makes no marked difference in the gross and microscopic appearance of hydronephrotic kidneys during the first twenty-four hours.

Problems in Renal Surgery.—Bug [illegible] importance of investigating the cause of [illegible] tion in deciding on operation, the proper preparation of the patient for operation, conservation of kidney tissue, nephrotomy preliminary to nephrectomy in poor surgical risks, and the free employment of transfusion and intelligent after-care in cases of kidney surgery.

Maine Medical Association Journal, Portland

17: 83-99 (May) 1926

Proceedings of Maine Medical Association, 1926.—p. 83.

Medical Journal and Record, New York

123: 711-782 (June 2) 1926

Modern Philosophy. Application to Medical Science. H. F. Wolf, New York.—p. 711.
Placing Thoracoplastic Cases in General Surgical Wards: After-Care. S. A. Knopf, New York.—p. 715.
*Bassler Pancreatic Efficiency Test in Chronic Cholecystitis. J. R. Lutz, New York.—p. 719.
Renal Function Tests in General Practice. H. L. Jameson, Philadelphia. —p. 720.
Stomatology in France in 1925. J. Tellier, Lyons, France.—p. 722.
*Treatment of Diabetes: Rational Regimen. A. I. Rubenstone, Philadelphia.—p. 725.
Alcoholic Nerve Block for Pain in Malignant Diseases. G. I. Swetlow and B. Weingarten, New York.—p. 728.
Psycho-Analytic Introduction to Study of Conduct Disorders of Lethargic Encephalitis: Plan for Psychosocial Reconstruction. L. P. Clark New York.—p. 730.
*Problem of Macerated Fetus. M. Rosensohn, New York.—p. 733.
Pyorrhea Alveolaris. A. J. Asgis, New York.—p. 734.
High Enemas and Irrigations. M. S. Shaine, New York.—p. 735.
Cystoscope as Aid to Diagnosis. J. Schwartz, New York.—p. 737.
Psycho-Endocrine States. E. H. Williams and C. A. Wright, Los Angeles.—p. 739.
Desiccated Gonadal Substances. H. Sharlit, H. M. Noyes and K. G. Falk, New York.—p. 741.
Clinical Aspects of Human Sex Gland Maldevelopment and Possible Relief. M. Thorek, Chicago.—p. 743.
Endocrines in Blood Pressure. W. Lintz, New York.—p. 744.
Goiter: Use and Abuse of Thyroidectomy and Iodine. I. Bram, Philadelphia.—p. 746.
Diagnosis and Treatment of Goiter. A. S. Jackson, Madison, Wis. —p. 748.
Hepatic Extract. M. F. Lautman, Hot Springs, Ark.—p. 751.
Production of Mydriasis in Rabbits with Thyrotoxic Blood Serum and Epinephrine. R. L. Pitfield, Philadelphia.—p. 752.
Malaria in Canada. W. R. Riddell, Toronto, Canada.—p. 761.

Bassler Pancreatic Efficiency Test.—Lutz recommends the use of the Bassler pancreatic efficiency test because it is simple, easy to perform, accurate enough for clinical interpretation and inexpensive. When low it usually indicates disease of the head of the pancreas. By determining the condition of the pancreas, it gives an indication for medical or surgical treatment in chronic cholecystitis. It is of diagnostic and prognostic value postoperatively.

Treatment of Diabetes.—Rubenstone describes the plan of diabetic management in use at the Mount Sinai Hospital. He refutes the assertion that it is necessary for a patient to be hospitalized in order that insulin and dietary measures may be carried out successfully.

Macerated Fetus.—The stillbirth rate at the New York Lying-In Hospital for 1924, according to Rosensohn, was 41 per thousand. The macerated fetus represented almost half of the stillbirths. In the cases of macerated fetus, syphilis was present in only fifteen of the ninety-four cases. Toxemia and eclampsia accounted for thirteen. In forty-four cases no cause could be ascertained.

Missouri State Medical Association Journal, St. Louis

23: 165-200 (May) 1926

Cancer of Vulva. E. D. Twyman and C. S. Nelson, Kansas City. —p. 165.
Physiotherapy in Orthopedic Surgery. J. A. Key, St. Louis.—p. 169.
Peptic Ulcer: Relation of Location and Type to Cure. G. E. Knappenberger, Kansas City.—p. 172.
Cholecystography. I. H. Lockwood and E. H. Skinner, Kansas City. —p. 174.
Psycho-Analysis. L. T. Dunaway, Eldorado Springs, and J. E. Dunaway, Exeter.—p. 176.
Blindness Among Six Thousand Adults. H. D. Lamb, St. Louis.—p. 179.

New York State Journal of Medicine, New York

26: 417-488 (May 15) 1926

Proceedings of Medical Society of State of New York, 1925.—p. 417.

Physical Therapeutics, Baltimore

44: 251-306 (May) 1926

Development of High Frequency Currents. F. deKraft, New York.—p. 251.
Treatment of High Arterial Tension. B. B. Grover, Colorado Springs. —p. 263.
Calcium as Food: Relation of Its Assimilation to Ultraviolet Radiations. H. Steenbock, Madison, Wis.—p. 272.
Electrotherapy Applied to Prostate. V. C. Pedersen, New York.—p. 278.
Method of Localizing Effects of Diathermy. N. E. Titus, New York.—p. 289.

Philippine Islands Medical Association Journal, Manila

6: 113-148 (April) 1926

Simple Goiter in Philippines. L. Lopez-Rizal and R. G. Padua.—p. 113.
Manila's Dysentery and Typhoid Toll. H. Lara.—p. 121.
Practice of Obstetrics in Philippines. B. Roxas and A. Villarama. —p. 127.
Ileostomy in "Acute Abdomen." J. P. Celis.—p. 130.

Physical Therapy, X-Ray, Radium, Omaha

7: 251-313 (May) 1926

Application of Radiology and Physiotherapy to Gynecology. IV. Galvanism. E. P. Cumberbatch, London.—p. 251.
Galvanism: Its Availability in Gynecology. J. U. Giesy, Salt Lake City. —p. 257.
Interpretation of Dental Roentgenogram. W. A. Lurie, New Orleans. —p. 263.
Water as Therapeutic Agent. C. E. Stewart, Battle Creek, Mich.—p. 270.
Roentgen Ray: Historic Sketch. A. F. Tyler, Omaha.—p. 279.
Physiotherapy in General Practice. L. S. Merrill, Ogden, Utah.—p. 283.

Public Health Journal, Toronto, Canada

17: 199-270 (May) 1926

Montreal Antituberculosis and General Health League. A. W. Currie. —p. 199.
Id. A. G. Fleming.—p. 205.
Report for 1925 on Activities of French Center Conducted in Cooperation with School of Public Health Nursing of University of Montreal. J. A. Baudouin.—p. 222.
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Milk Problems in Canada. M. M. Seymour.—p. 241.

Quarterly Review of Biology, Baltimore

1: 139-314 (April) 1926

Evolution of Horse. W. D. Matthew, New York.—p. 139.
Chromosomes and Genetics. T. H. Morgan, New York.—p. 186.
Host Resistance and Types of Infections in Trypanosomiasis and Malaria. W. H. Taliaferro, Chicago.—p. 246.
Freezing and Survival of Insects at Low Temperatures. N. M. Payne, Minneapolis.—p. 270.

Southwestern Medicine, Phoenix, Ariz.

10: 205-246 (May) 1926

Clinical Conditions Simulating Pulmonary Tuberculosis. F. G. Holmes, Phoenix.—p. 205.
Use of Radiant Energy in Disease. W. W. Watkins, Phoenix.—p. 209.
Perforating Gastric Ulcers. H. D. Ketcherside, Yuma.—p. 212.
Occipitoposterior Position. H. A. Reese, Yuma.—p. 214.
Rabies. G. E. Shields, Yuma.—p. 216.
Ocular Manifestations of Pathology in Other Structures. T. H. Cates, Tucson.—p. 218.
Basal Metabolism in Tuberculosis. W. A. Gekler and B. J. Weigel, Albuquerque, N. M.—p. 221.

Surgery, Gynecology and Obstetrics, Chicago

42: 585-728 (May) 1926

*Hydatid Cysts in Children: Three Cases. H. W. Mills, San Bernardino, Calif.—p. 585.
*Operation for Complete Prolapse of Rectum. U. Maes and J. D. Rives, New Orleans.—p. 594.
*Treatment of Pelvic Infections: Analysis of One Thousand One Hundred and Five Cases. T. H. Cherry, New York.—p. 600.
Hypoglossofacial Anastomosis for Facial Paralysis in Two Cases. A. Brown, Omaha.—p. 608.
Sinus Pericranii (Stromeyer): Case. I. Cohn, New Orleans.—p. 614.
*Intercostal Neuralgia as Cause of Abdominal Pain and Tenderness. J. B. Carnett, Philadelphia.—p. 625.
*Intravenous Administration of Mercurochrome. H. H. Trout, Roanoke, Va.—p. 633.
*Acute Intestinal Obstruction Due to Malignant Disease. F. W. Rankin, Lexington, Ky.—p. 638.
Laryngectomy in One Stage. J. E. MacKenty, New York.—p. 644.
*Clinical Value of Erythrocyte Sedimentation Reaction in Surgery. E. H. Rubin, New York.—p. 652.
Rupture of Uterus Following Administration of Pituitary Extract. J. G. Sherrill, Louisville, Ky.—p. 657.
Exophthalmic Goiter in Pacific Northwest. J. T. Mason, Seattle.—p. 66[illegible].
Catheterization of Ejaculatory Ducts. H. C. Rolnick, Chicago.—p. 66[illegible].
*Intra-Abdominal Hemorrhage of Ovarian Origin. D. Feiner, New York —p. 671.
*End-Results of Medically Treated Peptic Ulcer. N. W. Jones, Portland, Ore.—p. 675.

Morphologic Changes Associated with Partial Occlusion of Pulmonary Veins of One Lung. K. Schlaepfer, Milwaukee.—p. 679.
Actinomycosis Bovis of Leg. G. M. Linthicum, Baltimore.—p. 688.
Operation for Gastric Ulcers of Lesser Curve. A. J. Walton, London. —p. 693.
Immature Cataract Operation for Use When Intracapsular Extraction Seems Inadvisable. C. H. Bagley, Baltimore.—p. 698.
Principles of Technic of Second Stage of Labor. J. B. DeLee, Chicago. —p. 701.
Some Types of Harelip and Cleft-Palate Deformities and Operative Results. W. B. Davis, Philadelphia.—p. 704.
Method of Obtaining Greater Relaxation with Whole Thickness Skin Grafts. J. S. Davis and H. F. Traut, Baltimore.—p. 710.
*Treatment of Carcinoma of Penis with Endothermy: Treatment of Metastatic Malignant Lymph Glands. H. A. Kelly and G. E. Ward, Baltimore.—p. 712.
Efficient Suprapubic Suction Drainage. H. H. Gile, Boston.—p. 713.
Method of Passing Wax Tipped Catheter Through Cystoscope Without Making Scratch. R. S. Mallard, Fort Worth, Texas.—p. 716.

Hydatid Cysts in Children.—The total number of cases of hydatid cysts in children for North America to date is only fourteen. Mills puts on record three of these cases and reviews the remainder.

Operation for Rectal Prolapse.—Maes and Rives have developed a plastic operation on the levatores ani and the pelvic fascia, which is based on the assumption that an abnormally deep culdesac, together with relaxation of the lateral ligaments, the levatores ani and the sphincter ani, is the cause of complete prolapse of the rectum.

Treatment of Pelvic Infections.—In 1,105 cases of pelvic infections analyzed by Cherry, the gonococcus was the inciting agent in 88 per cent, and in 12 per cent the condition was due to other causes. The use of diathermy as a conservative measure in the treatment of adnexal disease of gonorrheal origin was the most successful of the palliative methods, as it caused a resolution of pelvic masses in 66.6 per cent of the patients, besides relieving pain in practically 100 per cent. It also, by proper application of electrodes, controlled the infection of the lower genital tract. Initial acute attacks of adnexal inflammation should not be treated surgically, as they spontaneously subside. Recurrent attacks of pelvic inflammation are excellent reasons for the surgical removal on the pelvic lesions. When, in the course of operative removal of infected adnexa, pus contaminates the peritoneal cavity, the best results as to mortality and wound union are obtained by closure of the abdomen without drainage. If drainage is necessary, the vaginal route is better than the abdominal.

Intercostal Neuralgia.—Carnett defines intercostal neuralgia as being only a syndrome that may be present in any one of a great variety of lesions which involve the spinal cord, or the intercostal nerve roots, trunks or terminals. The underlying disease may be an irritative lesion of the sensory tracts in the spinal cord; any form of spinal meningitis, particularly syphilitic and tuberculous; a disease of intercostal sensory nerve roots or ganglions, as in herpes zoster; sarcoma, secondary carcinoma, tuberculosis or syphilis of the vertebrae; various forms of arthritis and ostearthritis of the spine; typhoid spondylitis; abnormal curvature of the spine; postural strains of the spine; trauma, either direct or indirect, to the spinal region or fracture of ribs; endogenous toxins, as from carious teeth, infected tonsils, upper respiratory tract infections, pneumonia, pulmonary tuberculosis, intra-abdominal foci of infection, infectious diseases, etc.; exogenous toxins, as lead, alcohol, arsenic, antitoxins, serobacterins, and various constitutional affections, as anemias, blood dyscrasias, syphilis and diabetes. Theoretically, an exhaustive, painstaking examination should reveal evidence of the underlying disease causing the symptoms of intercostal neuralgia in every case. In practice, however, it is often impossible to determine the definite cause, and frequently two or more causes may be acting together in any given case.

Mercurochrome for Blood Stream Infections.—Given a patient with a positive blood stream infection, from whom all possible foci have been removed, Trout says mercurochrome-220 soluble is worth a trial. At least, it is one more thing to do in these otherwise hopeless cases, and even if it is of no benefit to the patient, this will often prove of some comfort to the family. Trout does not believe, however, that all the claims made for mercurochrome as a blood stream sterilizer are as yet proved, and, like any other substance, it should not be put in a vein "unadvisedly or lightly."

Acute Intestinal Obstruction Due to Malignant Disease.—The four cases of acute malignant obstruction reported by Rankin have been the result in three instances of carcinoma, and in one instance of sarcoma. All represent malignant disease of different segments of the colon, and in each instance a different operative procedure was instituted. The location of the growth was in the splenic flexure in one instance, at the junction of the descending colon with the sigmoid in another, in the central portion of the sigmoid in the third, and in the ileocecal coil in the sarcoma case. All patients were suffering from acute obstruction on admission. Of the three cases of carcinoma, one represented an unheralded type of obstruction, while two were typical of subacute stenosis suddenly becoming acute. In the sarcoma case, the obstruction was an acute one due to intussusception. Three of the four made operative recovery, and one died from peritonitis following enterostomy.

Value of Erythrocyte Sedimentation Reaction.—Rubin found the erythrocyte sedimentation reaction to be a more reliable indication of the condition of the patient than the temperature chart. Its diagnostic and prognostic value are secondary to its value in indicating the acuteness of a process. Extrasurgical complications such as syphilis or tuberculosis tend to maintain high readings in spite of the improvement or even the cure of the surgical affection. In the absence of such complications, repeated tests may guide in the discharge of patients, although for many reasons it would not be practical to keep patients in the hospital until the reaction had reached normal limits. Because the test indicates the severity of tissue destruction, it should be of value in determining the advisability and time for operation.

Intra-Abdominal Hemorrhage of Ovarian Origin.—One of Feiner's cases was one of bleeding from a ruptured corpus luteum; the second case represents a group occurring in girls of adolescent age during one of their early menstrual periods. The third case exemplifies that group in which a twisted ovarian cyst may give rise to intraperitoneal bleeding.

End-Results of Medically Treated Peptic Ulcer.—A series of carefuly selected and controlled peptic ulcer cases have been studied by Jones from the standpoint of their end-results following medical management. Of the acute duodenal ulcers, that is, ulcers of less than one year's duration, 89 per cent have been apparently cured after periods of time varying from one to five years. Sixty-one and five-tenths per cent of the chronic duodenal ulcers have been apparently cured; but a word of doubt is expressed about the ultimate healing of cases in which there remains definite and permanent deformity. Fifty per cent of the acute ulcers and all of the chronic ulcers apparently heal with this deformity. Acute gastric ulcers apparently heal favorably under medical treatment. It is evident that some secondary ulcers heal in like manner. The suggestion is made that a long period of bed rest may be one of the most important principles, if it is not the most important principle, that is involved in medical ulcer therapy.

Endothermy for Carcinoma of Penis.—Kelly and Ward assert that, with proper technic (coagulation), the local lesion in carcinoma of the penis can be cured with endothermy. It is possible to eliminate a metastatic gland by incising the skin and exposing it and treating it with the strong bipolar coagulating current, destroying the whole interior of the gland.

Tennessee State Medical Association Journal, Nashville

18: 309-348 (March) 1926

Disease of Accessory Sinuses. M. M. Cullom, Nashville.—p. 309.
Leukemia. W. T. DeSautelle, Knoxville.—p. 316.
*Embryonal Adenomyosarcoma of Kidney. T. Barry and R. Monger, Knoxville.—p. 322.
Congenital Pyloric Stenosis. J. G. Eblen, Lenoir City.—p. 327.
Otitis Media. H. E. Christenberry, Knoxville.—p. 331.
Tic Douloureux. C. S. McMurray, Nashville.—p. 335.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, Bristol

13: 601-792 (April) 1926

Thomas' Hip Splint. D. Power.—p. 601.
*Chorionic Carcinoma in Testicle: Case. R. M. Handfield-Jones.—p. 606.
*Nerves of Stomach; Relation to Surgery. E. D. McCrea.—p. 621.
*Solitary Hemorrhagic Cysts of Kidney: Case Originating in Cavernous Hemangioma. R. C. Begg.—p. 649.
*Prostatectomy. I. Cohen, E. C. Dodds and C. H. S. Webb.—p. 656.
*Primary Tumors of Ureter. R. L. Stewart.—p. 667.
*Subphrenic Abscess. L. R. Fifield and R. J. M. Love.—p. 683.
Hemangioma of Leg. G. Bell and K. Inglis.—p. 696.
Surgical Treatment of Chronic Bacillary Dysentery. P. Manson-Bahr and A. L. Gregg.—p. 701.
*Closure of Congenital Clefts of Hard Palate. A. Campbell.—p. 715.
Simple Tumors of Intestine: Relation to Cancer. C. Dukes.—p. 720.
Case of Solitary Fibrocystic Disease of Humerus Exhibiting Spontaneous Resolution. A. W. Adams.—p. 734.
Fat Necrosis of Breast: Case. G. Hadfield.—p. 742.
Pedunculated Thyroid Tumor at Base of Tongue, Arising from Region of Foramen Cecum. F. Harvey.—p. 746.
*Appendix "Pinned" to Liver. W. W. Galbraith.—p. 749.
Fibromatous Tumor Containing Osteoclast-Like Cells Growing in Subcutaneous Tissue. A. Piney.—p. 752.
Sarcoma of Small Intestine in Boy of Three Years, Associated with Intussusception of Ileum. A. Fullerton.—p. 754.
Hypernephroma of Gallbladder: Cholecystectomy. W. Tyson.—p. 757.
Fusiform Dilatation of Duodenum Simulating Hour-Glass Stomach. J. Morley.—p. 759.
Implantation Dermoid of Terminal Phalanx of Thumb. H. Burrows. —p. 761.
Reducible Hernia of Lipoma of Knee-Joint. W. S. Handley.—p. 762.
Large Salivary Calculus Which Had Undergone Spontaneous Fracture Leading to Eburnation of Broken Surfaces. J. Berry.—p. 763.

Chorionic Carcinoma in Testis.—The swelling of the testis in Handfield-Jones' case came on quite rapidly and was accompanied by slight dragging pain in the right lower part of the abdomen. The only treatment of any sort suggested was that of radiant heat to the enlarged testis. Handfield-Jones saw the man for the first time eight months after the swelling was first noticed. The testis was removed, but the man died two months afterward. The postmortem examination revealed that both lungs were riddled with metastases. The superior mediastinum was full of a growth, which had spread around and enveloped the heart. The liver contained one large secondary nodule. A huge mass of affected glands was found on and between the aorta and superior vena cava about the level of the right renal vessels; also, a small collection on the external iliac vein and a very definite chain of secondary nodules along the lymphatic running parallel to the vas into the pelvis were found. Scattered all over the peritoneum of the lateral wall of the pelvis were numerous milk spots of growth connected by a fine white tracery of lymphatics. Apart from the chorionic carcinoma, other teratomatous elements were few and far between, and consisted of a few scattered islands of cartilage and some cysts lined by columnar and by cubical epithelium. The chorionic carcinoma was present in widespread areas.

Nerves of Stomach.—A review of the anatomy and physiology of the nerves of the stomach is given by McCrea, and an attempt is made to correlate this knowledge with certain features of the pathology of the organ. The effects of resections of the nerves is described in animals, and certain observations made on man are recorded. Evidence is given to show (1) that the anatomic distribution of the nerves to the stomach is sufficient to account for instances of reflex spasm or of incontinence of the pylorus in the case of gastric or duodenal ulcer, and of spasm or of atony of the body of the stomach with duodenal ulcer; (2) that the "ulcer-bearing" area of the stomach corresponds to the area in which the nerve branches are chiefly grouped; (3) that local spasm with resultant anemia is a probable cause of the chronicity of ulcer, aided by factors such as retention and infection set up by reflex spasm; (4) that certain of the "gastric neuroses" may be exactly simulated by the resection of either the vagi or the splanchnic nerves; (5) that the results of nerve stimulation and therefore of nerve irritation can also simulate certain of these "neuroses"; (6) that the phenomena grouped under the title of the "nervous dyspepsias" or "gastric neuroses" may have at least three sources of origin. These sources are: (*a*) peripheral irritation of the nerves, manifested by gastric signs and symptoms; (*b*) lesions of the nerve paths, and (*c*) central disorders, possibly of endocrine origin. As a logical sequence to the foregoing, operations on the nerves are indicated in certain disorders and diseases of the stomach. Two operations have been suggested based on these findings; one especially suited to the condition of pylorospasm, the other to that of cardiospasm.

Solitary Hemorrhagic Cysts of Kidney.—The suggestion is made by Begg that these solitary hemorrhagic cysts of the kidney are of the nature of partial hematonephroses, in which the source of the bleeding remains active over a long period of time. This source may be in the papillae of the involved portion of the pelvis. In the case reported, an angioma was demonstrated. In some instances the cyst may owe its origin to an angioma in the kidney substance itself. The diagnosis is obscure, and the treatment is total nephrectomy.

Renal Function Tests Before Prostatectomy.—Owing to the lack of uniformity of views on the value of renal function tests in relation to prostatectomy, an investigation of a series of cases was instituted by Cohen, Dodds and Webb. From a study of the figures obtained in relation to after-history, it was found that the nonprotein nitrogen content and uric acid content of the blood formed the best guide to prognosis. The upper limit of safety for the complete operation of prostatectomy was found to be 50 mg. per hundred cubic centimeters for nonprotein nitrogen, and 3.5 mg. per hundred cubic centimeters for uric acid. Experience has shown that if figures above these are encountered, the performance of a preliminary suprapubic cystotomy is advisable. The enucleation can then be carried out when the figures fall within the limits of safety. The blood urea content is much more unreliable than the nonprotein nitrogen and uric acid contents. A high blood urea content must always be regarded as a serious sign, but a low urea content cannot always be regarded as an indication of a normal kidney function. Laboratory findings should never be relied on alone, but should always be considered in combination with the condition of the patient.

Papilloma of Ureter.—Stewart reports a case of primary papillary epithelial tumor of the ureter, with cyst formation and evidences of early malignancy of a local character occurring in a woman, aged 75. Pain, hematuria and frequency of urination were the outstanding symptoms.

Etiology of Subphrenic Abscess.—In a series of seventy-eight cases of subphrenic abscesses analyzed by Fifield and Love, appendicitis was the cause in no fewer than thirty, the commonest variety being right posterior intraperitoneal, of which there were twenty-nine examples. The tendency of a right extraperitoneal abscess to extend forward between the layers of the falciform ligament was noticed in two cases, which suggests a possible route for drainage without involvement of the peritoneal or pleural cavities.

Operation for Cleft Palate.—Campbell uses a mucoperiosteal flap from the nasal septum to close the gap in the hard palate. It is brought down and sutured onto the raw base left by the elevation of a palatal flap so that the nasal raw surface is in contact with palatal raw surface. There is no raw surface in the mouth or in the floor of the nose. The cleft is covered by two flaps, one above the other, both of which contain periosteum.

Appendix "Pinned" to Liver.—Galbraith's patient, aged 11, complained of pain on the right side of the chest and the right upper quadrant of the abdomen, so severe that he was frightened to take a deep breath. There was tenderness all over the abdomen, but rigidity was confined to the right hypochondrium, and over that area there was extreme tenderness on pressure. A diagnosis was made of an acute abdominal condition, the most likely cause for which seemed to be inflammation of a high appendix resulting from an incomplete descent of the cecum. At operation the cecum was found raised out of the right iliac fossa and slightly pulled upward by a tight band which lay on the anterior surface of the ascending colon. Easily identified as the appendix, it was divided at its proximal end, the stump being ligated and buried in the usual manner. It was then dissected up toward the liver. The whole appendix was now free except the tip. The adhesion was dense, but it ultimately came away from the liver with a jerk. It was then seen that the difficulty in removing the appendix was due to a pin projecting from its tip and firmly fixed into the liver.

Journal of Neurology and Psychopathology, London

6: 267-357 (Feb.) 1926

Theory of Decussation. I. D. Suttie.—p. 267.
Glioma in Fourth Ventricle: Involvement of Triangular Vestibular Nucleus. W. F. Schaller.—p. 281.
*Levulose Tolerance Test in Paralysis Agitans. E. W. Hurst.—p. 291.
Case of Herpes Zoster, Apparently Due to Invasion of Ganglions by Round Cell Sarcoma. H. H. P. Morton.—p. 296.

Levulose Tolerance Test in Paralysis Agitans.—A certain degree of hyperglycemia is commonly observed in paralysis agitans but is inconstant, while a similar degree also occurs in cerebral vascular disease; it seems probable, therefore, in Hurst's opinion, that this hyperglycemia is the effect of coincident vascular disease and not of the nervous affection. In paralysis agitans there is no definite evidence of liver deficiency as detected by the levulose tolerance test. In only one of eighteen cases was an abnormal rise in the blood sugar found after the administration of levulose.

Journal of Tropical Medicine and Hygiene, London

29: 133-144 (May 1) 1926

*Vaccinia Variolae. II. M. Coplans.—p. 133.

Vaccinia Variolae.—Calf vaccine lymph rendered bacteria free within a few days by the leuko-brilliant green process has been found to retain its potency for several years. An instrument designed for the purpose of rapid and extensive vaccination of calves is described by Coplans. This consists of a double bladed scarifier with a fingerplate so adjusted as to provide a guard to limit the depth and width of the two parallel incisions. A method is described for the liberation of vaccine virus from epithelial tissue by means of wick siphonage. Rabbits inoculated intravenously with the liberated virus developed generalized vaccinia. The liberated virus was proved to be a nonfilter passer. The phenomenon, seen in previously immunized rabbits, of returning sensitiveness of the corneal epithelium to vaccine inoculation while the skin remains refractory, is described and discussed. Experimental results are stated as to the protection afforded to rabbits against vaccinia by treatment with serum obtained from immunized calves, goats and rabbits.

Lancet, London

1: 1075-1128 (June 5) 1926

Disease in Light of Evolution. F W. Andrews.—p. 1075.
Vision and Evolution. G E. Smith.—p. 1081.
Osteomalacia. F. S. Fowweather —p. 1082.
*Tuberculosis of Larynx. Treatment with Galvanocautery. S Thomson. —p 1084
Late Results of Operation for Chronic Painful Hip. C. M. Page.—p. 1087.
*Tubercle Bacilli in Tuberculous Pus. A. D. Gardner.—p 1090.
*Postmalarial Condition of Cerebrospinal Fluid in General Paralysis of Insane. J. E Nicole and J. P. Steel —p. 1091.

Use of Galvanocautery in Tuberculosis of Larynx.—Thomson believes that as a local help the galvanocautery is the most valuable remedy in cases of laryngeal tuberculosis, but the cases in which it is suitable are relatively few. These cases, well selected, yield a cure in a large proportion.

Tubercle Bacilli in Tuberculous Pus.—Gardner asserts that tubercle bacilli can be found microscopically in well over 90 per cent of specimens of tuberculous pus from lesions of bones and joints. This statement, which runs counter to prevailing opinion, is proved by the results of the examination of forty specimens of tuberculous pus. The tubercle bacillus was found microscopically in thirty-seven of these cases and proved present by injection of guinea-pigs in the remaining three cases.

Postmalarial Condition of Spinal Fluid of Paretic Persons.—That some alteration actually does take place in the cerebrospinal fluid after malaria therapy in general paralysis of the insane is shown by the report made by Nicole and Steel based on the examination of forty spinal fluids. The globulin content is much diminished, and in some cases the reading obtained by the colloidal gold test is less typically paretic than before treatment. Such a change tends to appear about the end of twelve months after malaria is terminated. With the further lapse of time beyond this period the change continues, and the colloidal gold reading becomes even more like a tabetic condition. In some cases nothing higher than a "2" has been obtained in either the paretic, syphilitic or meningeal fields.

Medical Journal of Australia, Sydney

1: 507-538 (May 8) 1926

Trophic Glial States in Spinal Cord Lesions. O. Latham.—p. 507.
*Digestion and Mental Disease. J. Bostock.—p. 510.
Estimation of Blood Urea: Hench-Aldrich Method. K. D. Fairley and B. Splatt.—p. 517.
"Cercaria Pigmentosa" in Limnaea Brazieri Bred in Aquarium to Which Sheep Fluke Eggs Had Been Added. B. Bradley.—p. 519.
Episcleritis and Tuberculin Treatment. J. F. Spring.—p. 520.
Banti's Disease. R. J. Millard.—p. 521.

Digestion and Mental Disease.—Bostock states that achlorhydria and hypochlorhydria are *surprisingly frequent* in the psychoses. They are not causal, but are expressions of the general psychophysical change. Evidence is adduced concerning the possibility of an intimate functional connection between the vagal nucleus, the thyroid gland and digestion. A preliminary investigation shows that achlorhydria is relatively more common in rabbits whose thyroids have been removed than in normal controls.

Tohoku Journal of Experimental Medicine, Sendai, Japan

7: 111-220 (April 30) 1926

*Differentiation of Myeloic and Lymphatic Leukocytes: Peroxidase Reaction (Copper Method) A. Sato and S. Sekiya.—p. 111.
Experimentation on "Peroxidase-Punctured" Animals. S. I. Yoshimatsu. —p 116.
*Colorimetric Method for Determination of Inorganic Sulphates in Urine, Blood and Milk. S. I. Yoshimatsu —p 119.
Excretion of Phenolsulphonphthalein by Normal Kidneys. S. Sugimura and T. Aomura.—p. 125.
Sensitization of Sympathetic System by Hypertonic Serum. S. Tashiro. —p. 144.
Micro-Organisms of Paratyphosus B. Enteritidis Group in Animals. K. Sakai —p. 153
Researches on Bacilli Resembling Paratyphosus A. K. Sakai.—p. 162.
Action of Alcohol on Circulation. H. Takahashi.—p. 169.
*Influence of Hemorrhage on Glycogen Content of Liver and Muscles of Rabbit. H. Tachi.—p. 197.
Fluctuation of Blood Sugar and Histologic Changes of Pancreas of Fowls Fed on Deficient Diet. T. Hoshi and S. Ukai.—p. 207.

Differentiation of Myeloic and Lymphatic Leukocytes.—A new peroxidase reaction is described by Sato and Sekiya which is said to be superior to other benzidine methods in simplicity, in sensitivity, in constancy of color and its contrast with the unstained red cells, and in the durability of the reagents used. This method is called the "copper method" because of the use of copper sulphate. Besides the differentiation of the myeloid and lymphoid nature of blood leukocytes, the copper peroxidase reaction possesses some clinical significances, which are described.

Colorimetric Test for Inorganic Sulphates.—A simple rapid colorimetric method for the determination of sulphates in the urine, blood and milk is described by Yoshimatsu. The sulphate is precipitated from a body fluid with benzidine hydrochloride. The precipitate is dissolved in water, and a mixture of iodine, potassium iodide and ammonia is added. The brown color thus developed is applied to the colorimetric method.

Influence of Hemorrhage on Glycogen Content.—Tachi asserts that a severe hemorrhage, i. e., bleeding of about two fifths of the total blood volume, called forth a great diminution of the glycogen content of the liver and muscle, in normal as well as in previously unilaterally splanchnectomized rabbits. In previously bilaterally splanchnectomized rabbits, the severe hemorrhage occasioned a diminution of the glycogen content of the liver and *muscle*, but the former was reduced only a little, while in the latter it was reduced to a marked degree though somewhat inferior to the other sets of experiments.

Annales de l'Institut Pasteur, Paris

40: 253-352 (April) 1926

Herpes Virus in Morocco. P. Remlinger and J. Bailly.—p. 253.
Action of Chloropicrine on Silkworm Cocoons. G. Bertrand.—p. 288.
*"Avidity" of Diphtheria Antitoxin. T. Madsen and S. Schmidt.—p. 300.
Duration of Gestation in Mice. Nakamura-Hirosi.—p. 303.
Tuberculosis of Cattle in Annam. H. Jacotot.—p. 309.
Borrellina: Filtrable Parasites of Insects. A. Paillot.—p. 314.

Avidity of Diphtheria Antitoxin.—The avidity, that is, the rapidity with which flocculation and neutralization occur when toxin and antitoxin are mixed, does not seem to be proportional to the antitoxic potency. On the other hand, the greater the avidity, the prompter the therapeutic action. Ten units of an antitoxin which neutralized the toxin immediately, and showed flocculation in seventy-five minutes, neutralized six lethal doses of toxin injected intravenously an hour before. With another antitoxin that took fourteen and fifteen hours for neutralization and flocculation, 150 units were required to accomplish the same results. Madsen and Schmidt add that the results of treatment of diphtheria may be improved if antitoxins are standardized by avidity as well as by *antitoxic potency.*

40: 353-453 (May) 1926

*Standardization of Tuberculins. A. Calmette and De Potter.—p. 353.
Transmission of Oriental Sore by Sandfly. Sergent et al.—p. 411.
*Reduction Test in Serodiagnosis of Cancer. C. Mondain et al.—p. 431.
Value of Synthetic Mediums. A. Berthelot.—p. 440.
Salmonella Disease in Rats and Guinea-Pigs. I. Gheorgiu.—p. 447.
Vaccination at Paris Against Rabies. J. Viala.—p. 450.

Standardization of Tuberculins.—This is a report prepared for the League of Nations' commission on standardization. Calmette and De Potter conclude that intradermal inoculation in parallel series, with a standard tuberculin, on a previously sensitized guinea-pig or on cattle, is the most reliable method for titration. But it is a gage of the special toxicity and antigen potency only for the species involved. The original Koch method gives no information as to antigen property, and the complement fixation reaction is totally unreliable.

Thomas-Binetti Reduction Reaction in Serodiagnosis of Cancer.—Thomas and Binetti found a very rapid decoloration of methylene blue by cancer serum, in the presence of cancer extracts. In Mondain, Douris and Beck's research, the phenomenon seemed to be due solely to the bacteria in the cancer extracts. It was proportional to the amount of the cancer extract, and occurred even without addition of cancer serum. The bacteria consume oxygen and liberate hydrogen, which is immediately retained by the methylene blue, thus entailing an oxidation-reduction reaction.

Archives des Maladies du Cœur, etc., Paris

19: 281-360 (May) 1926

*Pathology of Ventricular Bradycardia. E. Geraudel et al.—p. 281.
*Left Sino-Auricular Node of Human Heart. R. Segre.—p. 295.
Blood Reactions After Hemorrhage. Vedel et al.—p. 303.
Infectious Myelopathic Anemia. R. Lutembacher.—p. 311.

Ventricular Bradycardia from Stenosis of Artery in Conducting Apparatus.—Geraudel, Bénard and Hillemand describe the pathologic anatomy of a case of permanent ventricular bradycardia. The node of Tawara, the bundle of His and its branches appeared intact; but in the artery of the conducting apparatus, originating from the right coronary, considerable stenosis was found. It was evidently entailed by chronic inflammatory lesions. Thus the blood supply of the conducting apparatus in the ventricle was greatly reduced. The findings were identical with those recently described in a previous case. They may be a clew to the Adams-Stokes syndrome.

Sino-Auricular Portion of the Conducting Apparatus of the Heart.—Segre emphasizes that the left part of the sinoauricular node has a special character, suggesting the idea of a regular right and left node. Its function is evidently the same as that of the right part of the node, since their histologic structure is identical. The left node may serve exclusively the left auricle.

19: 361-424 (June) 1926

Examination of Venous Pressure. M. Villaret et al.—p. 361.
Effect of Impeded Abdominal Circulation on Heart and Vessels. G. Galata.—p. 378.
*Diastolic Hypertension in Syphilis, etc. C. Legrand.—p. 384.
Rupture of Aneurysm in a Case of Malaria. C. Roubier and Pétouraud.—p. 390.

Diagnostic Value of Diastolic Hypertension.—Legrand made several thousand examinations of the diastolic pressure. It was below 100 mm. mercury in healthy subjects. A slight hypertension was always a sign of some pathologic condition. It was noted, among others, at the onset of kidney disease, of insufficiency or infection of the veins, or of liver insufficiency. In five patients with congenital syphilis, a slight increase of the diastolic tension was the only objective sign. In one of these cases, further investigation revealed congenital syphilis in four or five other members of the family. The source of the disease was traced to a grandfather.

Archives Méd.-Chir. de l'App. Respiratoire, Paris

1: 1-94, 1926

*Interpretation of Respiratory Murmurs. E. Sergent.—p. 1. C'td.
*Pneumolysis. T. Tuffier.—p. 28.
Indications and Results of Phrenicectomy. F. Bordet.—p. 46.
Physiology and Technic of Phrenicectomy. Baumgartner and Alary.—p. 73.

The "Archives of the Respiratory Apparatus."—This new bimonthly has been founded by Sergent and Tuffier.

Respiratory Murmurs.—Sergent has reproduced the respiratory murmurs experimentally, and presents evidence to show that a pathologic murmur is not a superposed one but merely the physiologic murmurs under different physical conditions, resulting from the pathologic condition.

Pleurolysis.—In 1891 Tuffier stripped the pleura from the fascia of the chest wall to allow access to and collapse of the lung. He has applied this operation since in a total of fifty-five patients, bilateral in two. Artificial pneumothorax now answers the same purpose in most cases, but he still prefers the pleurolysis for hemoptysis and for incipient tuberculosis of the apex and for cavities with flexible walls; detaching the pleura from the thoracic wall accomplishes the purpose alone or with an implant of fat, omentum or paraffin, all under local anesthesia. It is useful also to supplement other interventions. He gives illustrations of the condition at necropsy in some of the patients years later, confirming the value of the procedure.

Bulletin de l'Académie de Médecine, Paris

95: 473-517 (May 18) 1926

Spirochetes of the Bronchi. F. Bezançon and E. Etchegoin.—p. 473.
Report of Committee on Alcoholism.—p. 480.
*Treatment of Recent Detachment of the Retina. P. Bolle.—p. 508.
Epidermomycosis Caused by Agent of Chicken Favus. A. Sartory et al.—p. 510.
Hydrotherapy in Gynecologic Disease. L. Derecq.—p. 512.

Sodium Chloride in Treatment of Detachment of the Retina.—Bolle describes his method used successfully in six cases of primary detachment of the retina. The first eight or ten subconjunctival injections, each of 1.5 cc. of an 8 per cent solution of sodium chloride, were made in the region of the detachment. Two or three injections were given weekly. Then two injections were given fifteen minutes apart; one of a 2 or 4 per cent solution was injected in the region of the detachment; the other, of a 6 to 10 per cent solution, at the opposite point. The amount of each was never over 1.5 cc. In detachment of the entire retina, the two injections of each solution were given simultaneously. The injections were followed with hot compresses. All the six patients seem to be definitely cured since no recurrence has been observed up to six years. Bolle emphasizes that the treatment succeeds only in recent cases. The benefit from the lively osmosis thus induced is manifest by the next day.

95: 519-548 (May 25) 1926

*Recuperation of Function in Paralysis. Guillain and Bidou.—p. 526.
Physiologic Standardization of Drugs. P. Cazeneuve.—p. 530.
Bone Autografts. L. Imbert.—p. 538.
*Diagnostic Value of Botelho's Test. J. Lavedan.—p. 543.

Uncrippling the Crippled.—Guillain and Bidou describe several of their fifty cases in which the application of Bidou's method of functional recuperation plus individual prosthesis has restored the earning capacity in old and severe paralysis. In six of the seven adult cases described, the paraplegia was consecutive to poliomyelitis.

Botelho's Test in Serodiagnosis of Cancer.—Lavedan's statistics include 200 tests for cancer made in the Radium Institute at Paris with Botelho's nitric reaction preceded by a refractometric examination. In the 111 cases of confirmed cancer, the test was positive in 74 per cent; in the noncancer cases, in 34 per cent. The percentage of accurate results was higher in cancer of the uterus and breast (82.5 and 85, respectively) than in cancer of the skin, upper respiratory or digestive tracts. In pathologic conditions, without cancer, the test was accurate in 47 per cent; in young and healthy persons in 100 per cent. The reaction does not seem to be specific for cancer or for cachexia. The false reactions observed sometimes in pregnancy, typhoid, diabetes, tuberculosis or syphilis are the negative side of Botelho's reaction. The preliminary refractometry materially reduced the proportion of false positive reactions. Further improvement of the Botelho test may eliminate them entirely. Even now, Lavedan says, it is one of the best methods for serodiagnosis of malignant tumors yet available.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 737-782 (May 14) 1926

*Vaccination Against Diphtheria. J. Roubinovitch et al.—p. 737.
Mass Immunization with Diphtheria Anatoxin. Martin et al.—p. 745.
Iodine Treatment of Exophthalmic Goiter. C. Flandin.—p. 761.
Convallamarin in Heart Insufficiency. Laignel-Lavastine and P. George.—p. 765.
*Case of Levulosuria. Snapper and S. von Creveld.—p. 774.
*Reactivation of Wassermann Test. H. Dufour et al.—p. 778.

Duration of Acquired Immunity Against Diphtheria.—Roubinovitch, Loiseau and Laffaille state that one injection of 0.5 cc. of anatoxin induced immunity in seventeen of twenty-three children with a positive Schick test. The immunity persisted for nineteen to twenty-five months. After two injections of 0.5 and 1 cc. of anatoxin, the immunity still persists in all the seventeen children of another group, for twelve to twenty-four months to date. No spontaneous immunization occurred in children with a positive Schick test continuing after two injections. In these children a third injection was required.

Case of True Levulosuria.—This case was mentioned June 19, 1926, page 1952.

Reactivation of Wassermann Test Under Infection.—Dufour, Widiez and Castéran injected polyvalent T. A. B. vaccine in a man, aged 60, syphilitic for forty years. Two injections were given a week apart; this induced a positive Wassermann test by the third day. Three weeks later the test became negative again. The case, they say, proves that a previous and latent syphilis may be aroused under the influence of an intercurrent infection.

50: 783-846 (May 21) 1926

*Metabolism in Gout. Loeper et al.—p. 783.
Tuberculin Test in Young Children. Lesné and Coffin.—p. 787.
*Reactivation of Wassermann Test in Infections. G. Milian.—p. 795.
*Tension and Chloral. C. Mattei and J. Dias-Caravoni.—p. 800.
Epidemic Septicemia of Multiform Erythema Type. Semerau-Siemianowski et al.—p. 804
Radiotherapy of Bone Myeloma. L. Boidin et al.—p. 807.
Fixation Abscess for Meningococcemia. L. Boidin.—p. 815.
Cachexia and Wassermann Test in Infants. M. Renaud.—p. 818.
Iodine in Treatment of Exophthalmic Goiter. M. Labbé.—p. 820.
Relapsing Form of Spirochetal Meningitis. Debray and Jonesco.—p. 831.
Value of Tuberculin Test in Adults. A. Jousset.—p. 834.
Fixation Abscess for Pneumonia. Queyrat.—p. 838.
Benzyl-Cinnamic Ether in Treatment of Tuberculous Orchiepididymitis. Tissot and Chaignon.—p. 840.

Rôle of Oxalic Acid and Cholesterol in Gout.—Loeper, Garcin and Tonnet's observation refers to a man, aged 60, with gout and numerous tophi, who died from uremia. Examination of a bursal cyst revealed only an insignificant amount of uric acid and urates, but a notable amount of cholesterol and calcium oxalate. The oxalic acid content of the blood was considerably above normal. The concretions in the kidneys consisted of cholesterol, calcium phosphocarbonate and oxalate, with very little uric acid. Uricacidemia, cholesteremia and oxalemia seem to be entailed by parallel disturbances of the metabolism of fats, nucleoproteids, and, possibly, also of sugars.

Factors of Reactivation of Wassermann Test.—Milian's experience includes cases in which a positive Wassermann test appeared in the course of herpes of the genital organs. Investigation and clinical signs testified to congenital syphilis. Of six cases with scarlet fever, a positive Wassermann test was positive only in one young man with signs of congenital syphilis. In one of Neuda's cases and in one of Marini's, the Wassermann test became positive in the course of influenza and typhoid fever. It is probable, Milian says, that many ulcerations, considered as tardy radiodermatitis, are in reality syphilitic lesions developed under the influence of the roentgen rays.

Action of Chloral on Arterial Hypertension.—Mattei and Dias-Caravoni report four cases of high blood pressure in which the benefit from chloral was manifest. Two doses of 0.5 Gm. of chloral or four doses of 0.25 were given daily by the mouth. In three or four days the arterial pressure had been reduced by from 2 to 6 cm. The effect persisted from three to six days after the treatment. There was simultaneous increase of diuresis.

Comptes Rendus de la Société de Biologie, Paris

94: 721-804 (March 26) 1926. Partial Index

Sulphur and Suprarenal Pigment. M. Loeper et al.—p. 740.
Double Chronaxy of Optic System. Bourguignon and Déjean.—p. 750.
The Electrocardiograph in Myocardiac Insufficiency. A. Clerc and M. Bascourret.—p. 759.
Action of Antibacteriophage Serum. P. Fabry.—p. 774.
Surface Tension of Plasma in Peptone Shock. E. Zunz.—p. 776.
Changes of Alkali Reserve from Ultraviolet Rays. C. de Gheldere and M. de Roover.—p. 784.
Rôle of Bile in Colon Bacillus Septicemia. Gratia and Doyle.—p. 803.

94: 805-956 (April 9) 1926. Partial Index

Anaerobic Micro-Organisms in Appendicitis. Weinberg et al.—p. 813.
Foot and Mouth Disease Virus Cultivated with Vaccine Virus. M. Belin.—p. 816.
*Injection of Plasma from the Tuberculous. G. Petit et al.—p. 823.
*Sedimentation of Erythrocytes in Leprosy. Gilbert et al.—p. 837.
Basal Azoturia. C. Richet, Jr., and R. Monceaux.—p. 840.
*Localization of Salicylate. P. Carnot and R. Coquoin.—p. 850.
Relations Between Agglutinating and Hemolyzing Properties of Serums. P. Meyer.—p. 869.
*Retention of Chlorides in Nephritis. L. Blum and N. Fusé.—p. 883.
Changes of Blood Under Local Cold: the Spectoreaction. Septelici.—p. 893.
Extinction Phenomenon in Scarlet Fever. Ciuca and Craciunesco.—p. 894.
*Sanocrysin and Sedimentation. L. de Carvalho and Ferreira de Mira, Jr.—p. 910.
Blood Coagulation During the *Puerperium*. M. V. da S. Moreira.—p. 928.
*Influence of Operation on Blood Platelets. Backman and Hultgren.—p. 942.

Action of Plasma from Tuberculous Animals on Others of Same Species.—Petit, Panisset and Kfouri introduced blood plasma from tuberculous patients, dogs, mice, rabbits and guinea-pigs into animals of these and other species. The injections did not entail any toxic phenomena in the healthy or the tuberculous of the same species. The survival of tuberculous animals, thus treated, seemed to be notably prolonged.

Sedimentation Speed of Erythrocytes in Leprosy.—Gilbert, Tzanck and Cabanis found acceleration of sedimentation in six cases of leprosy. They recall the analogous phenomenon observed by Salomon and Valtis in tuberculosis.

Localization of Salicylate in the Body.—Carnot and Coquoin administered sodium salicylate to rabbits and guinea-pigs by the mouth and subcutaneously. There was evidence that the tendons, cartilage and aponeuroses have a special affinity for this drug, and this entails its accumulation in and around the joints.

Nephritis with Mixed Retention of Chloride.—Blum and Fusé explain how a dry retention of chloride can coexist with a dropsical retention of chloride in nephritis with edema. The hydrated form presents retention of chlorine and sodium in the organic fluids, while the dry form occurs without retention of sodium in the tissues. The features of this mixed retention are an excess of water, chlorine and sodium in the blood plasma; accumulation of chloride in the blood corpuscles and organs, only slight increase of sodium in the organs.

Influence of Sanocrysin on Sedimentation Test.—De Carvalho and Ferreira de Mira injected twenty-six guinea-pigs with sanocrysin and then examined the blood from *intra-*

cardiac puncture. The sedimentation speed of the erythrocytes seemed to be unchanged. They consider this as proof that sanocrysin is not toxic.

Effect of Surgical Intervention on Blood Platelets.—Backman and Hultgren conclude from their experiments on rabbits that every operation increases the number of blood platelets. This rise is especially pronounced and prolonged after removal of the spleen. It shows, they say, that the spleen has normally a weak inhibiting action on formation of blood platelets in the bone marrow.

Encéphale, Paris

21: 305-416 (May) 1926

Muscular Coordination in Relation to the Cerebellum. F. Tilney and F. A. Pike.—p. 305.
*Pituitary Cachexia. C. I. Urechia and N. Elekes.—p. 352.
Ear Labyrinth and Conjugate Deviation of the Eyes. Muskens.—p. 369.
Adler's Theory of the "Nervous Character." E. Wexberg.—p. 391.
Medicolegal Reactions in Epidemic Encephalitis. M. Rossi.—p. 399.

Tuber Cinereum and Pituitary Cachexia.—Experiments on animals, Urechia and Elekes say, tend to prove that it is not the removal of the pituitary gland which induces Cushing's pituitary cachexia, but accidental injury to the tuber cinereum. Changes of the pituitary gland may induce cachexia if the infundibulum is simultaneously involved, or if there is glandular auto-intoxication affecting the vegetative nuclei. Lesions of these nuclei entail variations of the body temperature, of carbohydrate and fat metabolism, also loss of strength. Transient improvement from pituitary extract may be explained by the specific action of pituitary hormones on the sympathetic nuclei of the adjacent tuber cinereum.

Gynécologie et Obstétrique, Paris

13: 321-400 (May) 1926

*Diabetes Insipidus in Eclampsia. Laurentie and Basiliou.—p. 321.
Pathology of Uteroplacental Apoplexy. R. Mestre.—p. 332.
*Application of Forceps to Superior Strait. Lantuéjoul—p. 343.
Treatment of Retrodeviation of the Uterus. A. Pistuddi.—p. 351.

Pathogenesis of Diabetes Insipidus with Eclampsia.—Laurentie and Basiliou describe a case of diabetes insipidus associated with eclampsia, both developing three weeks after childbirth. No albumin or sugar was discovered in the urine. Arterial hypertension and hypertension of the cerebrospinal fluid may have caused mechanical distention of the cerebral ventricles. On the other hand, the cerebral disturbances may have favored fixation of eclampsia-inducing toxins in the elective third ventricle. They are inclined to believe that the same toxic factor responsible for the eclampsia, as well as the mechanical factors, may have been—alone or together—responsible for the diabetes insipidus.

Application of Forceps to Superior Strait.—Lantuéjoul says that conditions in six cases have compelled this rare intervention at the Tarnier Clinic in less than two years. While the head was held firm, the woman's legs were first extended to the utmost (Crouzat position) and then the thighs were slowly flexed on the abdomen. This mobilized the pelvis around the stationary head, and it then readily engaged. In one case the position was thus changed four times. The mechanism was studied on the cadaver.

Journal de Médecine de Lyon

7: 251-276 (May 20) 1926

Endocrine Derangement with Congenital Syphilis. J. Nicolas and J. Gaté.—p. 251.
Masked Congenital Syphilis. M. Carle.—p. 261.
*Seasonal Desquamation. M. Favre and J. Gaté.—p. 267.
Bazin's Vacciniform Hydroa. J. Nicolas et al.—p. 273.

Seasonal Desquamation of Hands and Feet.—In one of Favre and Gaté's three patients, desquamation of the hands had been recurring every spring for ten years, lasting each time about four months. A second case was observed in a young girl, and the third in a roentgenologist. The affection is characterized by pseudovesicular elevation of the epidermis and desquamation, each patch with a well defined margin. The affection is sometimes located also on the soles. It resembles dyshidrosis in that the latter presents areas of desquamation in the terminal stage. Excellent results were obtained with daily applications of iodine. The hands were washed with hot water every morning, then rubbed with glycerin and swabbed with iodine. The affection disappeared in from a few days to two weeks; it had proved rebellious to all previous treatment. It is possible that the affection may be caused by a fungus, but examinations to date have been negative.

Nourrisson, Paris

14: 65-136 (March) 1926

*Chafing About the Buttocks. A. B. Marfan.—p. 65.
*Absorption of Injected Fluids in Infants. L. Ribadeau-Dumas and Tisserand.—p. 79.
The Nervous System in Infants. H. Lemaire.—p. 85.
The Trained Visiting Nurse for Infants. Chaptal.—p. 93.

Rebellious Chafing in Infants.—Marfan prefers a salve to powders (equal parts petrolatum and rectified wool fat). If strict hygiene and this salve fail to cure the erythema, he suspects syphilis.

Resorption of Fluids in Infant's Organism.—In Ribadeau-Dumas and Tisserand's tests, the speed of resorption of liquids injected subcutaneously seemed to be the same in infants as in older children, namely, about one hour. In the dehydration syndrome, the fluids were absorbed immediately. A considerable want of water was manifest also in premature infants. On the other hand, the absorption was retarded in marasmus in which, as has recently been proved, the water content of the organism is increased. In cases of malnutrition, a slow resorption testified to a menacing marasmus. While salt or glucose solutions are rapidly eliminated by the urine, albumin serums — horse serum, for example — are retained in the organism. Horse serum, however, should be used with great caution, since serum sickness may be dangerous in infants. They suggest an amine-dextrose serum, or horse serum deprived of albumin, plus amine. Injections of these fluids seemed to induce a regular increase of weight, and were not followed by any kidney complications.

14: 137-200 (May) 1926

Pyelonephritis, Pyelitis and Colibacillosis in Infants. Lavergne.—p. 137.
*Univitelline and Bivitelline Twins. E. Apert.—p. 155.
Maternity Ward for Tuberculous Women. A. Couvelaire.—p. 167.

Study of Twins.—Apert emphasizes that only twins originating from one ovum present a confusing resemblance. The likeness between twins derived from two ova is no more striking than that usually observed among brothers and sisters. Univitelline twins are always of the same sex; the bivitelline only in about 50 per cent. The frequency of univitelline or bivitelline twin births varies in different races. While univitelline pregnancy does not seem to be connected with the age of the woman, bivitelline pregnancy is most common between 35 and 40. The rôle of heredity is important in the latter, and is insignificant in univitelline pregnancies. Bivitelline pregnancy is a normal phenomenon, univitelline is pathologic, and syphilis seems to be most responsible. The percentage of stillborn infants, also the mortality during the first year of life is larger among univitelline than among other twins.

Paris Médical

59: 509-524 (May 29) 1926

Rare Earths in Treatment of Tuberculosis. Grenet and Drouin.—p. 509.
*The Vegetative System in Gout. C. Finck.—p. 515.
Potassium Permanganate as Oxidizing Agent. Veyrières and Valette.—p. 521.

The Vegetative Nervous System in Gout.—Finck found in forty-one patients with gout a condition of amphotonia, vagotonia predominating. An attack of gout seemed to represent a hypervagotonic crisis. Treatment should aim to reenforce the sympathetic. Drugs which tend to increase the sympathetic tonus are effective in arresting the attack of gout. Colchicin has a strong affinity for the sympathetic. In toxic doses it paralyzes the vagus.

59: 525-556 (June 5) 1926

Infectious Diseases in 1926. C. Dopter.—p. 525.
Study of the Herpes Virus. P. Remlinger and J. Bailly.—p. 536
Vaccination with Associated Vaccines. Zoeller and Ramon.—p. 539.
Spirochetosis with Polyserositis. P. Harvier and Chabrun.—p. 541.
*Ultraviruses and Filtrable Forms of Bacteria. P. Hauduroy.—p 544.
*Man as Plague Carrier. M. Leger.—p. 552.

The Ultraviruses and Filtrable Forms of Bacteria.—Hauduroy does not agree with Nicolle that ultraviruses may originate from filtrable forms of bacteria. They represent two different forms of germs, although having certain common properties. The ultravirus is invisible and filtrable; it develops only in the presence of living matter (biotropism), and it induces highly contagious diseases. The properties of the filtrable forms of visible bacteria are not all determined as yet, so far as known, they are filtrable and invisible, difficult to cultivate, and they may retain their vitality for years While the Shiga bacilli live only one month in an artificial medium, their filtrable forms were still alive and transmitted the disease after ten years in his tests It is possible that further study of the filtrable forms of bacteria may revolutionize the present theories as to certain diseases

Man as Carrier of Plague Bacillus.—Leger's conclusions are based on observations made during several epidemics in the French colonies in Africa Contrary to the current theory, rats could not be incriminated for the plague in man In other colonies an epidemic of plague occurred before the rat plague epizootic During certain epidemics, the rats did not harbor the plague bacilli. On the other hand, there was evidence that the disease was transmitted from man to man, by intermediation of healthy carriers of the specific bacillus The question now is to determine how long the bacillus can survive in human reservoirs, and whether it passes into the blood

Presse Médicale, Paris

34: 641 656 (May 22) 1926

*Hydrophilia Skin Test M Labbe et al —p 641
*Agar Vaccine in Skin Infections H Jausion et al —p 642

Skin Test for Resorption Speed of Fluids.—Labbé, Violle and Azerad applied the test in patients with cardiac or renal edema, or with ascites from liver disease They injected intradermally 0 2 cc of a 0 85 per cent salt solution While the resulting swelling of the cuticle normally disappears in an hour or an hour and a half, in these pathologic conditions it disappears in from five to thirty-five minutes The results were the same with injections of plasma or of serum The resorption speed was reduced in diabetics in the preedematous stage The test revealed complete parallelism between the water want of the tissues and humors of the body and the diuresis, in infectious diseases The resorption skin test seems to have not only biologic interest but also some clinical value

Advantages of Biologic Dressings with Agar Vaccine.—Jausion, Vaucel and Diot used for the vaccine an emulsion of one or of associated microbes, cultivated on agar Tepid dressings were applied daily the first four days, then at one or two day intervals Different skin affections such as furunculosis, folliculitis, impetigo, ecthyma and intertrigo disappeared definitely after from four to fifteen applications. Reinoculation of soft chancre was negative in the bearer after about ten dressings Vulvovaginitis and ulcerations of the cervix were rapidly improved, the results were also favorable in external suppurating otitis and blepharoconjunctivitis The vaccine was used in prophylactic treatment in surgical wounds, there was never any infection

34: 657 672 (May 26) 1926

Pyelography Legueu et al —p 657
Anatoxin in Vaccination Against Diphtheria C Zoeller —p 659
Insulin in Fattening Treatment of Nondiabetics G Ichok —p 663

34: 673 688 (May 29) 1926

Arthroplasty for Correction of Stiff Joints C Lenormant —p 673
*Pathogenesis of Thirst L Binet —p 676
Present Status of Metapsychics R van der Elst —p 683

Pathogenesis of Thirst.—The sensation of thirst, Binet says, is of local origin, when induced by dryness of the mouth as, for instance, from prolonged talking It is of general origin, when associated with loss of water by the organism as, for instance, in excessive diuresis or perspiration. Thirst may be also connected with mental derangement or with a disturbed water metabolism, for which lesions of the tuber cinereum may be responsible Binet queries whether the tuber cinereum possesses two adjacent centers, one for thirst and the other for polyuria, or whether it merely regulates the water balance.

34: 689 704 (June 2) 1926

*Treatment of Varicose Veins J. A Sicard and L Gaugier.—p 689.
Idem G Delater.—p 693.

Occlusion Treatment of Varicose Veins.—Sicard and Gaugier believe that sodium salicylate is the drug of choice in local treatment to induce sclerosis in varicose veins. Injections of the salicylate into the dilated vein induced a cure in 95 per cent of their cases of small or medium varicose enlargement. The injections seem to be harmless, and do not cause pain. A dose of 2 cc. of a 20 per cent solution is given at the first injection, 2 or 3 cc of a 30 or 40 per cent solution at the second injection, two or three days apart. The dose of 5 or 6 cc never should be surpassed. Five or six injections, given within from two to four weeks, induced complete sclerosis of medium sized varicose veins on one leg. Mercury biniodide or quinine may be indicated for large varices or in those rebellious to the salicylate No phlebitis or embolism was ever observed with this treatment Hypertension, heart insufficiency, kidney disease or arterial claudication are contraindications for this obliterating treatment. It should never be tried with a history of phlebitis, or in women with fibroma, or in pregnant women

34: 705 720 (June 5) 1926

*Therapeutic Bloodletting A Lemierre and E Bernard —p 705
Chronic Cholecystitis and Appendicitis Ramond and Parturier —p 710

Physiologic Action of Bloodletting and the Indications for It.—Lemierre and Bernard discuss the action of venesection in its main field, acute cardiac insufficiency. The reduction of the venous hypertension, and the consequent resorption of the dropsical fluid, give the heart a chance to work again, and the lost balance is more or less restored, the symptoms subsiding. They reiterate that the action of bloodletting is purely mechanical. In heart disease, the effect on diuresis is the reverse of what is observed under other conditions: Withdrawal of 1,100 and 700 Gm of blood in two of their patients increased the output of urine at once by 2,500 cc Venesection displays no beneficial influence in uremia or in permanent arterial hypertension The vital indications for it are in paroxysmal hypertension from any cause, especially in acute edema of the lungs connected with arterial hypertension or mitral stenosis, also in infectious edema with pneumonia, and in the edema of acute nephritis with retention of chlorides, characterized by phenomena of cerebral edema, also in eclampsia, in coma and cortical blindness. They cite instances of these various types from their own and others' experiences

Revue Française d'Endocrinologie, Paris

2: 85 163 (April) 1926

*Kidney Function in Exophthalmic Goiter G Etienne et al —p 85.
*Intestinal Toxemia M R. Castex —p 95
*The Thyroid Sign J Parisot and G Richard —p 115
Biologic Tests in the Elderly R Legrand —p 123

Kidney Function in Exophthalmic Goiter.—Etienne, Verain and Petitjean's research confirmed that the renal disturbances frequently accompanying exophthalmic goiter are not of organic, but of functional character. Prolonged effort on the part of the kidney to eliminate an excess of waste products may cause fatigue, and finally congestion The renal changes are then secondary, and are associated with heart insufficiency. They subside as the goiter improves under treatment.

Thyroid and Ovarian Insufficiency in Intestinal Toxemia.—Castex refers to a case of grave congenital myxedema in a girl, aged 9 The parents did not show any signs of thyroid insufficiency, but both suffered with chronic constipation, which had become aggravated in the mother during the last months of pregnancy. The child presented signs of protozoal intestinal infestation. Thyroid and iodine treatment had only slight effect, but notable physical and mental improvement followed at once on treatment of the intestinal parasitism The intestinal toxemia of the mother may have affected the thyroid of the fetus, entailing congenital myxedema Intestinal toxemia may be responsible also for defective ovarian functioning, insufficient or excessive menstruation In these cases organotherapy fails, unless combined with measures to combat the intestinal intoxication

Roentgenology of Hypertrophied Prostate.—Coutts' eight roentgenograms show the advantages of comparing exposures made from the side and the front in investigating adenoma of the prostate.

Revista Medico-Cirurgica do Brazil, Rio de Janeiro

34: 49-96 (Feb.) 1926

*Epidemic Meningitis. A. Renzo and A. de Assis.—p. 49.
*Iodine Treatment of Chancroid. F. Cerqueira Pereira.—p. 73.
Case of Acute Angioneurotic Edema. Afranio Rezende.—p. 80.

Tension of the Cerebrospinal Fluid in Epidemic Meningitis.—Renzo and de Assis record the wide fluctuations in the tension in the course of epidemic meningitis in the young woman whose case is described in detail. The disease proved fatal the twenty-fifth day; serotherapy had not been begun until the third day. The irregularity in the course, the recrudescences, hypertension, and weakness after the injections of the antiserum indicated a toxic action from the nonspecific elements of the antiserum, detracting from the therapeutic effect. They urge the necessity for starting the serotherapy within forty-eight hours, even on mere suspicion of the disease from nuchal rigidity. In thirty-seven other fatal cases, the course had been from two to thirty days. They regard the prognosis as unfavorable if more than forty-eight hours has elapsed since the first symptoms before the antiserum is injected.

Nascent Iodine Treatment of Chancroid.—Cerqueira Pereira reports excellent results from Aleixo's method for applying iodine to tropical and torpid ulcers and chancroid. After cleansing, anesthetizing with a 1 per cent solution of stovaine, and drying the lesion, it is covered with a thin layer of iodoform, and a hot glass rod is drawn lightly over the surface, generating fumes of nascent iodine. The iodine liberated, deposited on the surface of the lesion, forms a black coating. In the six cases of simple venereal chancroid described, the cure was complete under six or seven, or at most, eleven applications. The method is based on Farnarier's success with nascent iodine in treatment of various superficial lesions.

Revista Soc. Arg. de Radio y El., Buenos Aires

1: 47-75 (Dec.) 1925

Case of Calcified Gummas in the Liver. P. A. Maissa.—p. 47.
Differentiation of Spinal Cord Tumors. A. Marque.—p. 53.
*Angioma of the Diploe? E. L. Lanari and A. Marque.—p. 70.

Roentgenography of Angioma of the Diploe.—Lanari and Marque have found angiomas transparent to the roentgen rays as a rule. In two cases of angioma of the elbow, with phleboliths, and in a huge lymphangioma of the head and neck, the lesions were opaque, as also in two recent cases in which extensive pigmented nevus of the face and scalp was accompanied with hemiplegia and epileptic seizures. The roentgen-rays showed branching shadows resembling those visible to the naked eye in cirsoid angioma, and they explain the symptoms as the result of an angioma in the diploe, diverting the blood supply of the brain. The danger of hemorrhage forbids surgical intervention.

Archiv für Schiffs- und Tropenhygiene, etc., Hamburg

30: 231-274 (June 1) 1926

Halogen Compounds as Anthelmintics. R. Kudicke and W. Weise.—p. 231.
Gnats in Russia: A New Sandfly. P. P. Popow.—p. 240.
Coccidiasis in a Woman at Tiflis Chatridse and Kipschidse.—p. 248.
*The Duodenal Tube in Tenia Expulsion. B. Klein.—p. 250.
Malaria and Pregnancy. H. E. Inhelder.—p. 251.
Conditions as to Hygiene in Ports of Southern Brazil. Fischer.—p. 253.

Duodenal Tube in Treatment of Tenia.—Klein extols the prompt and dependable results of treatment when the anthelmintic is given through the duodenal tube. The tube is left in place for the three fractioned doses, at half hour intervals, followed with the laxative. In twelve of his sixteen cases the tenia was expelled entire.

Beiträge zur klinischen Chirurgie, Berlin

136: 195-384, 1926

Insulin in Surgery in Diabetics. O. Minkowski.—p. 195.
Insulin in Surgery in Diabetics. E. Melchior and Wagner.—p. 209.
*Brain Function Localization and Anesthesia. Kulenkampff.—p. 224.
Painful Tubercle. A. Most.—p. 252.
*Arthritis Deformans: Treatment. E. Payr.—p. 260.
*Surgery of the Brain and Spinal Cord. F. Krause.—p. 330.
Decompression of Posterior Cranial Fossa. F. Voelcker.—p. 339.
*Hyperventilation in Traumatic Epilepsy. L. Heidrich.—p. 341.
Some Rare Epitheliomas of the Skin. J. Jadassohn.—p. 345.
An Epithelial Growth on the Alveolar Process. H. Euler.—p. 359.
Perichondritis of the Laryngeal Cartilage. V. Hinsberg.—p. 365.
*Adhesive Pericarditis in Childhood. K. Stolte.—p. 368.
Operation on a Cholemic Patient. A. Tietze.—p. 375.
Do Gall-Stones Migrate? D. Kulenkampff.—p. 377.
Bacterial Flora of the Hand in Its Usual State. Breitkopf.—p. 379.

Reconstruction of the Theory of Cerebral Cortex Localization in the Light of Experience with Anesthesia.—Kulenkampff comes to the conclusion that the basal ganglia are the seat of the personality and of consciousness and the center of pain sensation. Here lies the point of attack of anesthesia. He distinguishes a "cortical will" and a "basal will." It is this basal will before which, manifested in his patients, the physician's arguments stand helpless. The best means of approach to the basal will is hypnosis. The relation of hypnosis to the basal ganglia and to the cortex are discussed at length. The material at the disposal of the hypnotist, by which he achieves his results, is contained in the cortex, but the state itself is produced independently of cortical function. He also distinguishes a "basal pain" and a "cortical pain," and discusses the relation of anesthesia to each. Recent theories of anesthesia have neglected the biologic factor, and have therefore been unable to account for certain accidents. Mechanically directed pharmacology and medicine is a wrong road, leading away from actuality. Clinician and pharmacologist must work together.

Treatment of Primary and Secondary Arthritis Deformans, Constitutional Pathology of Joints.—Payr regards primary idiopathic arthritis deformans as a prematurely, hence pathologically, aged joint. He recommends distention of the capsule by repeated filling with 0.5 per cent. procaine-epinephrine solution under pressure. This relieves pain and enables the patient to bear muscle massage and hyperemia in various forms. Injection of camphorated phenol and roentgen irradiation cause permanent increase in the joint fluid. Senile changes in the joint and elsewhere in the patient should be combated by constitutional means, not forgetting psychic influences. Where surgery is necessary, much can be done by conservative arthrotomy. In the hip, in severe cases, resection often gives good results. In the chronic infectious form of secondary arthritis deformans, anesthetizing injections may be followed by injections to soften adhesions and indurations. Not till the joint is comparatively painless and mobile is mechanotherapy in place. In ankylosis, excellent results may be be obtained by arthroplasty. The technic for injection of the various joints is given. Payr found leukocytosis in almost all cases of fibrous or bony ankylosis or with a tendency thereto, regardless of the etiology of the arthritis or the duration of the ankylosis. The constitutional factors of joint pathology are discussed at length.

Observations from the Field of Surgery of the Brain and Spinal Cord.—Krause finds that determination of the lower limits of a lesion by myelography after injection of iodized oil is a step in advance. He describes three cases in which the procedure would have shown operation to be useless, in two because of the extent of the lesion, and in one because of the presence of a second tumor at a lower level.

Hyperventilation in Traumatic Epilepsy.—In seven epileptics (35 per cent of those tested), Heidrich was able by hyperventilation to elicit symptoms which pointed accurately to the site of the lesion, as afterward found at operation. The hyperventilation consisted of intensive breathing for ten to fifteen minutes, in a recumbent or sitting position. In patients who react, the procedure enables the physician to provoke an attack when it can be under his observation.

Adhesive Mediastinopericarditis in Children.—Stolte reports five cases in which Brauer's cardiolysis, with removal of the fourth to the sixth ribs, was performed. A woman, aged 22, who for ten years had suffered from decompensation on slight overexertion, is now able to carry a hod of coal upstairs. A boy, aged 11, who when brought to the clinic collapsed on mounting five or six steps, was skating six months after the operation; three and three-quarters years after the operation, his symptoms are returning. Another boy, aged 11, is reported by his parents to be free of symptoms four years after operation. A third boy of the same age, practically bedridden for four months, left the clinic in good condition, but died one year later; the cause of death is not known. In the fifth case, the immediate excellent results have been followed by return of symptoms.

Dermatologische Wochenschrift, Leipzig

82: 597-636 (May 1) 1926

*The Cure of Leprosy. A. Paldrock.—p. 597.
The Usefulness of Bruck's Reaction. J. Mestschanski.—p. 606.
Temporary Roentgen Sterilization in Both Sexes. S. Bormann.—p. 612.

The Cure of Leprosy.—Five patients were discharged from the Dorpat leper hospital clinically and bacterioscopically well after less than two years' treatment with carbon dioxide snow. Paldrock's theory is that freezing sets antigens free, with resultant formation of antibodies, and an active immunization is thus obtained. Bismuth therapy was combined with the carbon dioxide snow treatment in the last case, and the curative processes were greatly accelerated.

82: 705-732 (May 22) 1926

*Psychic Urticaria. F. Dufke.—p. 705.
Lichen Nitidus Generalisatus. A. Alexander.—p. 709.
Gingivitis and Stomatitis. Lucke.—p. 712.
Personal Prophylaxis of Venereal Diseases. Notthafft.—p. 714.

Psychic Urticaria.—Dufke saw urticaria appear on the face, neck and arms of a woman of good health and normal mentality when a piece of silk or satin was hung about her neck, or when linen was, without her knowledge, substituted. She stated that for two years she had been unable to wear or handle silk, because of this peculiarity. Dufke made the diagnosis of psychic urticaria.

Deutsche medizinische Wochenschrift, Berlin

52: 861-900 (May 21) 1926

Counting the Blood Platelets. F. B. Hofmann.—p. 861.
Membrane Theory of Excitation. F. Schellong.—p. 862.
Herpes Zoster and Chickenpox. E. Hoffmann.—p. 864.
Epigastric Syndromes. H. H. Berg.—p. 867.
Sulphur in Shock Treatment. P. Spiro.—p. 868.
*Sympathectomy in Asthma. E. Hesse.—p. 870.
Degkwitz' Sheep Measles Serum. W. Hagen.—p. 871.
"Typhoid in Pomerania." Klare.—p. 872.
"Typhoid Menace in Pomerania." H. Straub.—p. 873.
*Hormones and Mineral Waters. II. H. Kopf.—p. 874.
Skin Test in Echinococcosis. G. Deusch.—p. 875.
Allergy After Tuberculin Plus Vaccinia. H. Fernbach.—p. 875.
*Abdominal Pain. F. Franke.—p. 876.
Tables for Special Diets. A. Kaemmerer.—p. 877.
Treatment of Metatarsalgia. Romich.—p. 878.
Dilation of Uterine Cervix. W. Nussbaum.—p. 879.
Instrument for Constriction. Feldheim.—p. 879.
Tuberculosis of Upper Respiratory Passages. L. Joseph.—p. 880. C'cn.
Physician's Age Insurance. R. Oppenheimer.—p. 883. C'td.
"Arrowsmith." E. Stern.—p. 884. C'cn.
Italian Literature, 1925. H. Jastrowitz.—p. 895. C'cn.

Counting the Blood Platelets.—Hofmann directed Flössner and Danz to investigate the best fluid for preservation of blood platelets. They found this in the Tyrode solution, with addition of about one fifth of its volume of a 0.1 per cent solution of mercuric chloride. The counts made in healthy subjects averaged 760,000 platelets in men and 682,000 in women. The usual methods yield less than one half of this number. This is due to the fact that the small—and probably young—platelets break up with the other methods. Hemoconia seem to be products of their disintegration.

Sympathectomy in Asthma.—Hesse removed the cervical sympathetic in seventeen patients (in five of them, on both sides) in treatment of asthma. Less than 30 per cent were cured for up to twenty-one months. The majority were failures. It is impossible to predict the outcome, but he has the impression that the intervention might be justified.

Hormones and Mineral Waters.—Kopf fed fresh thymus to tadpoles. When using a mineral (bitter) water he found that the thymus—instead of promoting—inhibited their growth.

Pain in the Abdomen or in the Abdominal Wall.—Franke claims priority in the discovery of the symptom of tenderness evoked by pinching the skin, described by Strecker and von der Velden and reported recently in these columns.

Jahrbuch für Kinderheilkunde, Berlin

112: 237-358 (May) 1926

*Etiology of Influenza. A. Adam.—p. 237.
Atrophy of the Pancreas in Children. F. Gross.—p. 251.
Congenital Muscular Contractures. A. Hottinger.—p. 258.
Brain Degeneration After Measles. K. Mosse.—p. 272.
*Lipoids in Children. P. György.—p. 283.
Etiology of Atrophy. K. Svehla and C. Saitz.—p. 298.
Vasoneurotic Constitution. B. Schagan.—p. 321.
*Hygiene of School Work. G. Hinsche.—p. 330.
Recurring Swelling of Parotid Gland. S. Wolff.—p. 334.
"Hardness of Muscles." F. Trendtel.—p. 336.

Etiology of Influenza.—Adam emphasizes that the decrease in infant mortality is limited to the nutritional disturbances. Diseases of the respiratory tract do not participate in the decline. He made 500 blood-agar cultures from the nasal and pharyngeal secretions. Pneumococci of type IV were found in 60 per cent of the children under 2 years of age; in 51 per cent up to 6 years; in 33 per cent up to 14, and in only 2.5 per cent of the adults tested. He suggests the name "pneumococcus planus" for this type.

Lipoids in Children.—György investigated the cholesterol-lecithin ratio in the serum. It is high in the blood of the mothers but is surprisingly low in the blood of the new-born. The ratio remains low for the first two months, but the absolute quantity of the lipoids increases. After this, only the cholesterol increases. The ratio parallels the sedimentation speed. Both lipoids are low in fever. He was unable to induce alimentary hypercholesteremia or hyperlecithinemia.

Hygiene of School Work.—Hinsche points out that the strong emphasis placed on athletics has certain disadvantages. It distracts the attention of the children to such an extent that the other regular requirements of learning overstrain them. Athletic training is dangerous unless there is time for compensatory recuperation.

Klinische Wochenschrift, Berlin

5: 921-968 (May 21) 1926

Accidental Heart Murmurs. P. Martini.—p. 921.
*Tetany and Biologic Spring. E. Moro.—p. 925.
Artificial Wassermann Reaction. H. Sachs et al.—p. 928.
*Vitamins and Bacteria. W. Kollath.—p. 930.
*Blood Sugar After Ligation of Pancreatic Duct. Nather et al.—p. 932.
Viability of Transfused Erythrocytes. H. Wildegans.—p. 936.
*Physique and Phthisis. I. Neuer and P. Feldweg.—p. 939.
Roentgen-Ray Dose and Changes of Current. V. Wucherpfennig.—p. 942.
Bismuth Line. S. Rothman and R. Kurz.—p. 943.
Recklinghausen's Disease. S. Tannhauser.—p. 944.
Artificial Sources of Light. S. Bommer.—p. 946. C'cn.
Physiology of Organs of Sense. O. Koehler.—p. 949.

Tetany and Biologic Spring.—Moro discusses the seasonal aspects of tetany. It occurs very rarely during the summer. The peak of frequency is in March, although it may appear earlier if the cold weather changes suddenly to warmer. He attributes the predisposition to the absence of light in the homes during the winter, with consecutive rickets and its metabolism tending to hypocalcemia. Another cause is the increased irritability of the vegetative nervous system occurring at the same time as the buds begin to swell on the trees. The weather is the provocative factor of the attack. Insolation is partly responsible, since a grave attack may follow the first treatment with artificial light in spasmophilic children. Other meteorologic factors are also contributing causes.

Vitamins and Bacteria.—Kollath confirms Grassberger's observation on the enhanced growth of influenza bacilli in the neighborhood of other micro-organisms, if there is only little blood present, and consequently little of the thermolabile V factor added. He regards this as evidence of vitamin production by the other bacteria. The phenomenon described by Neisser as "wetnursing"—growth of influenza bacilli in colonies of the diphtheria group—occurs in the presence of minimal amounts of iron. The diphtheria bacilli evidently synthesize both the iron-containing X factor and the other, the V factor. Together with Leichtentritt, Kollath fed large amounts of bacteria to guinea-pigs, but could not prevent scurvy. Influenza bacilli did not grow well on blood from guinea-pigs with experimental scurvy, although washed erythrocytes from these animals enhanced the growth of the bacilli. The serum from these guinea-pigs inhibited the favorable influence even of normal blood. They explain this by a fermentative destruction of the V factor, which occurs to a much less degree in normal serum. Blood from pigeons with experimental beriberi did not differ from the normal. Irradiated salts of iron did not enhance the growth of influenza bacilli, but other germs could use them for production of the X factor.

Blood Sugar After Ligation of Pancreatic Duct.—Nather, Priesel and Wagner confirmed Mansfeld's observation on hypoglycemia in some of their dogs after ligation of the pancreatic duct. They also confirm the obesity. It is not certain whether the hypoglycemia is due to overproduction of insulin or to some action on the thyroid.

The Physique and Phthisis.—Neuer and Feldweg made anthropometric studies on 230 patients with pulmonary tuberculosis. Among these, fifty-five were of the decided sthenic type and sixty-four were asthenic. Although the physical symptoms had been about the same in the beginning, the *former group during the period of observation had a mortality* of 4 per cent against 50 per cent in the second group. The subjective feeling was good in the sthenic type.

Medizinische Klinik, Berlin

22: 795-832 (May 21) 1926

*Feeding of Children. E. Müller.—p. 795.
Prognosis of Angina Pectoris. F. Kisch.—p. 798.
Aortalgia and Angina Pectoris. N. Ortner.—p. 804.
*Treatment of Roentgen Ulcer. F. Franke.—p. 805.
Intraspinal Treatment of Syphilis. O. Nast.—p. 806.
Air Embolism. F. Dyrenfurth.—p. 807.
*Silver Chloride and Gastric Ulcers. B. Pfab.—p. 808.
*Idem. P. Saxl and A. Kelen.—p. 809.
Endocrine Disturbances. J. Kretschmer.—p. 810.
*Bristles in Lacrimal Duct. H. Lachmann.—p. 812.
Gonorrheal Pus. A. Buschke and W. Jost.—p. 812.
Allergy After Tuberculin plus Swine Serum. M. Nakata.—p. 813.
Cancer and Its Treatment. O. Strauss.—p. 818. C'cn.
Prescribing Narcotics. E. Rost.—p. 831.

Feeding of Children.—Müller pleads against the overfeeding of children with milk. In the second and third year, 400 Gm. daily is enough. Between the seventh and tenth year, 300 Gm., and later 250 Gm. are a good average. Milk contains more fluid than is needed. Dried milk might be advantageous. Children should be given about 20 Gm. of meat or liver daily in the second year; 40 Gm. in the fourth; 60 Gm. in the eighth, and up to 100 Gm. at puberty. Blood is a valuable food. About one sixth to one third of an egg yolk —preferably raw—is recommended for children over 1 year of age every other day. Older children may have two or three eggs—not more—per week. Bread is an important source of protein—not only of carbohydrates. Crackers, and pastries made from the finest flour should be avoided. Vegetables and fruits are necessary. It is irrational to boil the potatoes in water and thus extract the salts, unless the water is used for vegetables. It is useless and harmful to force the child to take soup; two or three tablespoonfuls of a concentrated bouillon are enough.

Treatment of Roentgen Ulcer.—Franke acquired a roentgen-ray ulcer on his finger. It resisted treatment until he applied locally diphtheria antitoxin, although there were no diphtheria bacilli on the ulcer.

Silver Chloride and Gastric Ulcers.—Pfab cut off parts of the mucous membrane of the stomach in dogs. He then—following Saxl's suggestion—administered silver chloride to some of them, and noted a better healing tendency than in the control.

Silver Chloride and Gastric Ulcers.—Saxl and Kelen treat gastric and duodenal ulcers by administration of a 2 per cent solution of colloidal silver chloride. About 2-4 cc. of it is taken in half a glass of water before breakfast and before retiring. An alkali must not be taken immediately before or after the silver chloride, since it may dissolve it and cause argyria.

Bristles in Lacrimal Duct.—Lachmann removed from the upper lacrimal duct of a girl two bristles which probably had been introduced during brushing and dyeing of the eyebrows.

Monatsschrift für Geb. und Gynäkologie, Berlin

73: 129-252 (May) 1926

*Intra-Uterine Prediction of Sex. R. Dyroff.—p. 129.
Implantation of the Tube in the Uterus. A. Mandelstamm.—p. 138.
*Painless Labor with Increased Contractions. P. Gellert.—p. 143.
Gwathmey's Synergistic Anesthesia. J. Finger.—p. 162.
Puerperal Involution of Abdominal Walls. H. W. Siedentopf.—p. 175.
Case of Phlebitis in the Puerperium. F. Kermauner.—p. 188.
Double Uterus and Tubal Pregnancy. F. Heimann.—p. 193.
Postoperative Emphysema of the Abdominal Wall. Zoefgen.—p. 201.
Congenital Ectopic Kidney. H. Baumm.—p. 213.

The Interfereometric Intra-Uterine Prediction of Sex in One Hundred Cases.—Dyroff foretold the sex of the child correctly in seventy-four of his one hundred cases. The failures were equally divided between boys and girls. Better results must be sought by improvement in the test material, through eliminating as far as possible the nonspecific elements.

Painless Labor with Reenforced Uterine Contractions.—Gellert obtains anesthesia and relaxation of the cervix by paracervical injection of procaine and epinephrine and increases the strength of the contractions by addition of an endocrine ecbolic. "The pain of labor is not physiologic." At the beginning of the second stage of labor he relaxes and anesthetizes the perineum by injecting the pudendal nerve, just mesial to each ischial tuberosity, with a similar but stronger solution. The strength of the contractions is maintained by quarter-hourly administration of a pituitary preparation. By these means in normal delivery, in a primipara, the child is born in at most two hours and the process is painless. Gellert has used the method in thirty cases and has seen no untoward effects. The total dose of procaine is 0.4 Gm.; of the pituitary preparation 4-6 cc.

Münchener medizinische Wochenschrift, Munich

73: 853-894 (May 21) 1926

The Passing of Chlorosis. H. v. Hoesslin.—p. 853.
Purpura. F. Krömeke.—p. 856.
*Azorubin Test of Liver. R. Fenstermann.—p. 859.
Dermatitis from Orange Peel. R. Müller.—p. 864.
Treatment of Chilblains. G. Brase.—p. 866.
Foreign Bodies in Lungs. P. Hornung.—p. 867.
Aplastic Anemia and Chloroma. O. Herz.—p. 868.
*Edema of Scrotum with Mediastinal Tumor. M. Hochrein.—p. 869.
Mechanical Treatment of Lisping. H. Gutzmann, Jr.—p. 870.
Quotations from I. P. Semmelweis. F. Bruck.—p. 872.
Kidney Disease: Contracted Kidney. C. R. Schlayer.—p. 872.
Medical Chamber and Organization. A. Stauder.—p. 875.
Reorganization of Physicians. Wingler.—p. 876.
International Population Movement. H. Schmidt.—p. 876.

Azorubin Test of Liver.—Fenstermann confirms the advantages of Azorubin S in diagnosis of disease of the liver. In healthy subjects, 95 per cent of the injected dye is excreted by the liver and 5 per cent by the urine. With disturbance of the liver, the dye increases in the urine. It is less toxic than any other dye used. The technic is simple: merely colorimetric examination of the urine after intravenous injection of 4 cc. of a 1 per cent solution.

Edema of Scrotum with Mediastinal Tumor.—Hochrein's patient had edema of the scrotum due to compression of the vena cava by a mediastinal tumor. The lymph probably did not drain well enough.

Wiener klinische Wochenschrift, Vienna

39: 589-620 (May 20) 1926

Tendencies in Dermatology. L. Arzt.—p. 589.
*Postoperative Irradiation. J. Borak.—p. 593.
*Iodine in Otitis Media. H. Sternberg and K. Goldberger.—p. 594.
*Breeding of Hookworms. K. Usami.—p. 595.
*First Aid. S. Jellinek.—p. 597.
Treatment of Neuroses. H. Kogerer.—p. 599.
Epilepsy. R. Dreikurs.—p. 602.
Digitalis Treatment. L. Braun.—p. 605.—C'cn.
Kitchen for Diabetics. W. Schlesinger. Supplement.—pp. 1-8.

Postoperative Irradiation.—In 1919, Borak treated with roentgen rays sixty-three women after an operation for carcinoma of the breast. Of these, twenty-six (42 per cent) are still free from metastasis, and six (10 per cent) have died from other diseases.

Iodine in Otitis Media.—Sternberg and Goldberger inject subcutaneously 1 cc. of a 5 per cent solution of sodium iodide, containing traces of free iodine, in patients with acute catarrh of the middle ear. They noted improvement within twenty-four hours and recovery within six days in five out of ten patients.

Breeding of Hookworms.—Usami mixes the stool with charcoal and incubates it in Petri dishes. After three or four days he covers the plates with agar and pours a little water on it. The larvae penetrate the agar and can be easily found in the water.

First Aid.—Jellinek compares seven cases of injury by a low tension current, with insufficient first aid, and the resulting five deaths, with eight cases of grave injuries, mostly due to high voltage, but with recovery of the victims, due to the presence of mind of clever or trained people. Long hesitation as to what should be done, and neglect to start artificial breathing before the arrival of skilled help were outstanding features in the former group. Even simple things such as pulling out of the contact were omitted. Immediate artificial respiration saved most of those in the second group. One in this group was a baby who had touched a defectively insulated lamp. The mother found the baby apparently dead, but shook it frantically—until it began to breathe. He believes in the necessity for practically universal training in giving first aid.

Zeitschrift für Krebsforschung, Berlin

23: 241-398 (May 20) 1926

Tar Cancer. G. Döderlein.—p. 241.
*Cancer Filtrates in Mouse Cancer. V. Bisceglie.—p. 340.
Paracutaneous Application of Tar. V. E. Mertens.—p. 351.
*Lung Cancer in Miners. Rostoski, Saupe and Schmorl.—p. 360.
Enzyme as Cancer Virus. M. Mühlmann.—p. 385.
Cancer in Argentina. A. H. Roffo.—p. 395.

Cancer Filtrates in Mouse Cancer.—Bisceglie injected mice with a filtrate from mouse adenocarcinoma and transplanted the latter tumor in the same mice. Cancer developed much more rapidly in these animals than in the unprepared controls. The filtrates exert a similar action on the growth of cancer in vitro.

Lung Cancer in Miners.—Rostoski, Saupe and Schmorl deal with the lung tumors observed among the miners of ores in Schneeberg in Saxony: Twenty-one deaths occurred in three and a quarter years among 154 miners. Of these, postmortem examination revealed cancer of the lung in thirteen cases and, among the eight who had not been subjected to necropsy, a tumor was probable in two. This makes 71 per cent of the deaths as due to tumors—mostly carcinomas—of the lungs. Among them were two who had stopped working in the mines fifteen and twenty-two years before. Only two deaths from lung tumors were noted among the nonminer population of the district. A marked anthracochalicosis of the lungs may predispose to cancer, but does not account fully for its development.

Zeitschrift für Tuberkulose, Leipzig

45: 97-176 (May) 1926

Stages of Tuberculosis. A. Genersich.—p. 97.
Congenital Tuberculosis. R. Kochmann.—p. 107.
Immunity in Tuberculosis. J. Holló.—p. 109.
*"Sanocrysin Experiments." H. Møllgaard.—p. 120.
*Reply. O. Bang.—p. 122.
Drugs and Foods in Tuberculosis. G. Schröder and H. Deist.—p. 127.

"Sanocrysin Experiments."—Møllgaard objects to the small doses used by Bang in his experiments. He should have used 0.02 Gm. per kilogram instead of 0.01 Gm. The second objectionable feature was the use of Sanocrysin without the serum. The third was in the forcing of the treatment without heed to the reactions. Bang replies that Møllgaard used strains which were nearer to saprophytes than to tubercle bacilli. In spite of the enormous infecting dose, about 40 per cent of the controls developed no significant tuberculosis. He emphasizes that tubercle bacilli grow well in comparatively concentrated solutions of Sanocrysin in broth ($\frac{1}{2.000}$-$\frac{1}{4.000}$), although they turn black from absorption of the gold. The experiments on rabbits showed no difference between larger and smaller doses. Møllgaard's alleged antituberculin serum mitigates the metal poisoning but not a tuberculin shock.

Zentralblatt für Chirurgie, Leipzig

53: 1297-1360 (May 22) 1926

Improved Extension Apparatus for Fractures. Kulenkampff.—p. 1298.
*Hemostypsis by Blood Transfusion. R. Andler.—p. 1299.
"Snapping Shoulder." H. A. Grueter.—p. 1303.
Anesthesia Apparatus for Experimental Surgery. A. Fischer.—p. 1307.
Indications for Resection in Peptic Ulcer. L. Drüner.—p. 1310.
Vein Ligation in Postanginal Infection. E. Keppeler.—p. 1311.
Suggestion in the Use of the Rubber Drain. K. Mermingas.—p. 1314.

Arrest of Hemorrhage from the Bladder by Transfusion of Small Amount of Blood.—In six cases of hemorrhage from the bladder of three to seven weeks' duration, uninfluenced by the usual hemostyptics, Andler was able to stop the bleeding by transfusion of 40 cc. of blood, so that cystoscopy could be performed.

Zentralblatt für Gynäkologie, Leipzig

50: 1233-1296 (May 8) 1926

Hemorrhagic Infarction of Uterus and Adnexa. F. Danisch.—p. 1234.
Chemical Changes in the Aging Placenta. B. Bienenfeld.—p. 1239.
*Alcohol by Mouth in Puerperal Fever. H. Küstner.—p. 1240.
Carcinoma of the Cervix: Histology and Prognosis. A. Plaut.—p. 1244.
*Adhesions in the Cervix Uteri After Curettage. F. Wolff.—p. 1247.
*A Conservative Treatment of Febrile Abortion. G. Schwarz.—p. 1251.
Continuance of Pregnancy Despite Curettage. S. Weissenberg.—p. 1262.
Comment on Roesle's Abortion Statistics. Niedermeyer.—p. 1268.
Tracheal Catheterization: Technic. L. Zorn.—p. 1270.
Prevention of Tearing of the Fetal Membranes. J. Brock.—p. 1271.

50: 1297-1360 (May 15) 1926

Interferometric Diagnosis. H. Runge.—p. 1297.
Thymus Extract in Obstetrics. H. Knaus.—p. 1304.
Physiology of Fallopian Tube. F. v. Mikulicz-Radecki and W. Nahmmacher.—p. 1309.
Papyraceous Twins in Triple Pregnancy. P. Wolff.—p. 1313.
Death During Pregnancy from Rupture of Aneurysm. Saenger.—p. 1324.
Mechanism of Central Perineal Tears. E. Sachs.—p. 1326.
Operating by the Vaginal Route. W. Pfeilsticker.—p. 1331.
A "Mechanical Plugger" for Uterine Tamponade. J. A. Beruti.—p. 1337.
Ott's Method for Testing Patency of Tubes. Lemperg.—p. 1342.

Treatment of Septic Puerperal Fever by Giving Large Quantities of Alcohol.—In ten cases Küstner obtained prompt cure by administering each day sufficient brandy and wine to produce deep intoxication by the time of the expected chill. He saw no bad results. Three patients, who had a strong dislike to alcohol and vomited the greater part taken, showed no improvement under the treatment; two of these died. The theory is that by slowing up metabolism, alcohol spares the strength of a patient with lowered nutrition, but Küstner considers of greater importance the effect of alcohol on the bacteria. In a thoroughly drunken man, alcohol is present in the blood in a concentration of about 0.75-1 per cent. Experiments in vitro indicate that, while 1 per cent of alcohol does not kill streptococci, it checks their development.

Adhesions in the Cervix of the Uterus Following Curettage.—Wolff reports three cases of atresia of the cervix following postpartum curettage or artificial abortion by a physician. Scraping the region of the internal os should always be avoided; this requires special care in the puerperal uterus, from which the internal os itself has practically disappeared.

Conservative Treatment of Febrile Abortion by Drainage.—A narrow strip of gauze, dry or wet with alcohol, is introduced into the cervical canal, beyond the internal os. The gauze is changed daily. It keeps the cervical canal open, provides drainage, and by exciting or keeping up uterine contractions favors expulsion of retained fetal tissue. Five or six changes of gauze are usually required, and the average necessary stay in the hospital is fifteen to twenty days. Schwarz reports that this treatment has worked so well in the Marburg clinic that it is now applied to all infected abortions in which digital or instrumental emptying of the uterus appears too dangerous.

Zentralblatt für innere Medizin, Leipzig

47: 481-496 (May 22) 1926

Psychotherapy of Sequels of Organic Internal Diseases. A. Schneider.—p. 481.

Meditsinskoe Obozrenie, Astrakhan

5: 3-101 (April) 1926. Partial Index

*The Bone Marrow in Malaria. A. Puchok.—p. 9.
The Blood Picture with Vagotonia. M. Orloff.—p. 12.
The Predisposition in Nervous Diseases. D. Sheffer.—p. 32.
Dermatitis from Occupational Dust. V. Memorskiy.—p. 54.
*Sympathectomy for Glaucoma. I. Belaeff.—p. 57.

Malaria Parasite in Bone Marrow.—Puchok examined the red bone marrow of the sternum of four persons with chronic malaria. The specific plasmodia were present in the bone marrow only in those cases in which they had been found in the peripheral blood, before the trephining.

Sympathectomy for Acute Glaucoma.—Belaeff applied the operation in three cases of glaucoma, with more or less impairment of vision in the other eye. The superior cervical ganglion on the affected side was removed under local anesthesia in two cases, and in one under chloroform. Notable reduction of the intra-ocular tension, subsidence of the acute attack, and enlargement of the peripheral visual field were the immediate results. The improvement has persisted for four months to date. The anterior margin of the sternocleidomastoid muscle served as the guide in the operation. Belaeff adds that the endocrine glands may play a certain rôle in the pathogenesis of glaucoma, since the latter occurs mostly at the age of involution of the sex glands.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 1677-1772 (April 24) 1926

Duodenal Juice in Clinic and Diagnosis. Martens and Koers.—p. 1684.
*Cancer from Epidemiologic Standpoint. C. Bakker et al.—p. 1698.
Fracture of Head of Radius. T. de Waard.—p. 1703.
Thyroid Insufficiency in a Tadpole. M. Bolten.—p. 1711.
Case of Sulphemoglobinemia. J. de Hartogh, Jr.—p. 1714.
Relations Between Warts and Condylomas. J. C. Müller.—p. 1716.
Hemangioma of the Vulva. J. A. van Dongen.—p. 1719.
The Cancer Research of the Last Few Years. C. Bonne.—p. 1720.

Epidemiology of Cancer.—Bakker, van Dam and Bonne head their article with the title "Where Have Our Cancer Patients Been Residing?" their aim being to stimulate research as to cancer houses and cancer regions throughout the country. They give maps showing that the cancer cases of a district usually occur in groups of adjoining houses. Sambon's map of an Italian village is reproduced; fourteen cases of cancer were known in the eleven houses on the east side of a certain short street, and only two on the west side of the street, the houses and mode of life approximately the same in all, with no kinship relations.

1: 1977-2064 (May 15) 1926

*Surgical Treatment of Pylorospasm in Infants. Suermondt.—p. 1978.
*The Brain After Malaria Treatment. G. P. Frets.—p. 1988.
*Pressure of Cerebrospinal Fluid. J. J. H. M. Klessens.—p. 1998.
Inflammation in Large Intestine and Consequences. Diddens.—p. 2004.
The Mazdaznan Cult. J. L. van Bodegom.—p. 2011.
Growth from Same Mouse Sarcoma in Europe and in Java. Oudendal.—p. 2014.
Painless Uterine Contractions. E. Sanders.—p. 2020.
Pernicious Anemia with Rapid Course. W. J. C. Verhaart.—p. 2022.

Operative Treatment of Pylorospasm in Infants.—Suermondt extols the advantages of the Rammstedt method which he has applied in twenty-four cases. It allows feeding at once, and he advises not to wait more than a few days before operating.

The Brain After Malaria Treatment of General Paralysis.—Frets gives the details of ten cases, all showing that the changes in the brain differ from those found in untreated cases. The microscope confirms that the anatomic benefit from the malaria treatment may parallel the clinical and serologic benefit, but like these is not constant. The special features of the general paralysis cortex still persist, although much less pronounced. The change for the better was least distinct in the one case in which the therapeutic infection had been with relapsing fever.

The Tension of the Cerebrospinal Fluid as Influenced by Mechanical Conditions.—Klessens calls attention to the differences in the pressure of the fluid at lumbar puncture according to the way the head is held. In his seventy lumbar puncture tests, it made a difference of 2 to 16 cm. (water) according as the head was bent forward on the chest or held erect. The lack of any such difference should suggest obstruction of the communication between the skull and spinal cavity..

Norsk Magazin for Lægevidenskaben, Oslo

87: 353-424 (May) 1926

Malformation of Female Genitals. G. Schaanning.—p. 353.
Ganglioneuroma in Cervical Sympathetic. F. Harbitz.—p. 371.
*The Suprarenals in Addison's Disease. F. Harbitz.—p. 371.
*Encephalography and the Normal Encephalogram. J. Riddervold.—p. 377.
*Pathologic Pictures in Encephalography. J. Riddervold.—p. 380.

The Suprarenals in Addison's Disease.—Harbitz states that in the last twenty-five years he has examined post mortem twenty-two cases of Addison's disease, and has always found extensive destructive lesions in both suprarenals, tuberculous in twenty of them; in the other two, severe and chronic inflammation and atrophy. At numerous other necropsies one suprarenal was often found destroyed, with nodules in the other or metastatic tumors in both but there had been no symptoms of Addison's disease. In two cases with defective data the assumption had been Addison's disease but the suprarenals were apparently normal, and he had qualified the diagnosis as dubious.

Encephalography.—Riddervold gives encephalograms showing the aspect in normal and in various pathologic conditions, after insufflation of air by lumbar puncture. In case of doubt he advises to wait a week or two and repeat the insufflation. In some cases the second encephalogram revealed normal conditions. In conclusion he cites instances of tabetic gastric crises relieved by the insufflation, and Wartenberg's case of subsidence of left cerebral hemiplegia and right headache in a young woman, with no recurrence for seven months after insufflation of 250 cc. of air.

Ugeskrift for Læger, Copenhagen

88: 475-500 (May 20) 1926

*Treatment of Pernicious Anemia. H. J. Bing.—p. 475.
Some Organic Nervous Affections. V. Christiansen.—p. 477.
*Diabetic Psychosis. P. J. Reiter.—p. 486.
Technic for Local Injection in Varicose Veins. E. Lunde.—p. 489.
Social Service in Institutions for the Tuberculous. G. E. Permin.—p. 494.
Traumatic Neuroses. J. Helweg.—p. 495.

Treatment of Pernicious Anemia.—Bing expresses surprise that wider use is not made of systematic administration of hydrochloric acid in treatment of pernicious anemia, as Bie has been advocating for several years. In four of thirteen patients given once or twice a day 5 to 8 cc. of dilute hydrochloric acid, the improvement was remarkable and has persisted to date. Two others improved under parenteral protein therapy (milk) but not to such an extent as under the acid substitution treatment.

Diabetic Psychosis.—Reiter comments on the comparatively favorable prognosis of diabetic psychoses, describing a case, notable for the improvement under dieting and for the hereditary taint. An incurable arteriosclerotic affection had been diagnosed at first.

88: 501-524 (May 27) 1926

*Some Organic Nervous Affections. V. Christiansen.—p. 501.

Symptoms from Sensory Irritation and Deficit Functioning.—Christiansen describes a case of diffuse sarcomatosis of the base of the brain which had caused only a few mild, strictly localized symptoms, with no signs of intracranial pressure. Pains and hyperesthesia speak for an essential idiopathic affection of the sensory neurons. In the rheumatic form of trigeminal neuralgia, there is intense tenderness at the emerging point of the nerve, while this is not the case in the malignant, tic douloureux form. A third form has been observed after epidemic encephalitis but he has encountered also isolated cases in recent years. These patients are comparatively young, and the neuralgia is extremely intense and refractory. He begins treatment of trigeminal neuralgia always with aconitine pills. He has obtained excellent results with this, and definite cures in a number of cases. Injection of alcohol is the next resource, but recurrence is the rule in a few months or years. In all three forms of trigeminal neuralgia there may be spontaneous remissions for months at a time. In one case of the malignant type, the injection of alcohol was postponed till the next morning, but before then a spontaneous remission was observed which persisted for more than a year.

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OSTEOCHONDRITIS, OR EPIPHYSITIS

A REVIEW *

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A brief consideration of the anatomy of the epiphyses will appropriately precede a review of our knowledge of the pathologic condition that has been variously named osteochondritis, epiphysitis and osteochondropathy, and which in special regions of the body has been given many descriptive designations or has been named after its discoverer or discoverers.

John Poland's[1] description in 1898 of the anatomy of the epiphyses has not been improved on, and the facts here presented are in accordance with his findings.

All the long bones have an epiphysis at each end, with the exception of the metacarpals, the metatarsals, the phalanges of the hands and feet, and the clavicle, all of which have an epiphysis at only one end.

The epiphyses, at birth, are composed of cartilage, with the exception of those of the lower end of the femur and the upper end of the tibia, which are partly ossified. It has long been known, in fact ever since the time of John Hunter, who proved it by animal experiments, that increase in length of bone takes place at the epiphyses. In the long bones, ossification always proceeds more rapidly at one end than at the other, and is more rapid and continues longer at the end at which the epiphysis is last united to the shaft.

Although in maturity the epiphyses freely communicate with the diaphysis, in earlier life the epiphyses are completely shut off from the diaphysis by the epiphyseal cartilage. It is only in disease conditions, especially in rickets, that the cartilaginous line is penetrated by blood vessels. "The epiphyses obtain their blood supply from the periosteal network of arteries, large branches of which perforate the thin layer of compact tissue on their exterior, and are distributed throughout the spongy cancellous tissue. Nearly the whole of the blood supply is therefore independent of the diaphysis. Only one or two minute arteries pass into the epiphyses from the diaphyses through the conjugal cartilage. This accounts for the comparatively infrequent occurrence of necrosis of the epiphysis even when the diaphysis is more or less completely displaced from off the epiphysis" (Poland).

Ossification takes place from the center of the epiphysis and proceeds toward the periphery until the entire epiphysis is ossified, with the exception of a thin layer at the junction of the shaft forming the epiphyseal cartilage or disk.

The importance of a thorough knowledge of the epiphyses, the time of their beginning ossification and their final junction with the shaft, and their number and relation to the shaft cannot be too strongly emphasized. Those interested in the subject are referred to Cohn's "Normal Bones and Joints"[2] and to Paul H. Stevenson's paper on "Age Order of Epiphyseal Union in Man."[3]

That the condition under consideration in this paper is a pathologic entity there now seems no reasonable doubt. The etiology, however, is still under discussion, and there is no general agreement on the actual pathologic changes that occur. There seems little doubt that the etiologic factors and the pathologic changes are similar in Legg's disease, Schlatter's disease, Köhler's disease of the tarsal scalphoid and Köhler's disease of the head of the second metatarsus. Recently another condition, namely, vertebral epiphysitis, has been added to the list, and it is quite probable that the same disease occurs in other epiphyses, especially those subjected to trauma, such as the epiphyses of the os calcis and of the olecranon. There is also fairly good evidence that the osteochondritis dissecans of König and the rare condition called malacia of the semilunar bone belong to the same category.

There is no general agreement on the etiology of epiphysitis except that it is quite definitely known that the disease is not tuberculous, rachitic or syphilitic. The infectious theory has a little evidence to support it, but the cases in which operation has been performed and in which a possibly causative organism has been isolated are so few that they may be explained on the grounds of coincidence or accidental contamination. Among the recent writers who favor the infectious theory as the determining or contributing cause are McWhorter,[4] Egaña,[5] Lewin,[6] Büttner,[7] Buchman,[8] Kidner[9] and Phemister.[10]

The theory of an endocrine origin is a pure assumption with no reliable evidence to support it.

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* Chairman's address, read before the Section on Radiology at the Seventy Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926

[1] Poland, John: Traumatic Separation of the Epiphyses, London, Smith, Elder & Co, 1898.

[2] Cohn, Isidore Normal Bones and Joints (Ann. Roentgenol. 4) New York, Paul B Hoeber, 1924

[3] Stevenson, P H Age Order of Epiphyseal Union in Man, Am. J. Physical Anthropol **7**: 53 93, 1924.

[4] McWhorter, G L Operation on Neck of Femur Following Acute Symptoms in a Case of Osteochondritis Deformans Juvenilis Coxae (Perthes' Disease), Surg Gynec Obst **38**: 632 637 (May) 1924.

[5] Egaña, A R · Infantile Deforming Osteochondritis, Legg Calvé's Disease, Semana med **32**: 549 566 (Sept 3) 1925

[6] Lewin, Philip Juvenile Deforming Metatarsophalangeal Osteochondritis, J A M A **81**: 189 192 (July 21) 1923.

[7] Büttner, Georg Perthes' Disease, Med. Klin **21**: 685 (May 8) 1925

[8] Buchman, J · Vertebral Epiphysitis: A Cause of Spinal Deformity. J. Bone & Joint Surg **7**: 814 (Oct) 1925

[9] Kidner, F C Causes and Treatment of Perthes' Disease, Am. J Orthop Surg **14**: 339 (June) 1916

[10] Phemister, D B · Operation for Epiphysitis of the Head of the Femur (Perthes' Disease), Arch Surg. **2**: 221 230 (March) 1921.

A history of trauma is present in some of the cases, but not in a sufficient percentage to make it appear the ultimate causative factor. The fact, however, that all the conditions classified as epiphysitis occur in locations that are subject to long-continued trauma, such as weight bearing, pressure or muscular pull or a combination of two or more of these, increases the probability that chronic injury is a most important factor in the etiology of epiphysitis. Even among those who accept the rôle of trauma, however, there is no consensus as to the pathologic changes produced. Some hold the view that the pathologic picture is such as is usually seen in a healing fracture; others report that they find an inflammatory process, while the majority interpret the pathologic changes as those of necrosis due to interference with the blood supply to the epiphysis. The supposition has been advanced that the condition is primarily due to some developmental anomaly or constitutional disturbance which eventually results in poor nourishment of the epiphysis at the time of its most rapid development. There is no good evidence to support this supposition, but Hartley[11] makes the following observation: "It is interesting to note that each lesion is associated with a definite age period, and that in each the age period is that in which the affected bone nucleus normally is actively developing." The opinion of the majority of investigators inclines to the idea that the disease is due to long-continued or occasionally acute trauma, resulting in interference with the circulation and in subsequent necrosis involving both the bone and the cartilage of the epiphysis.

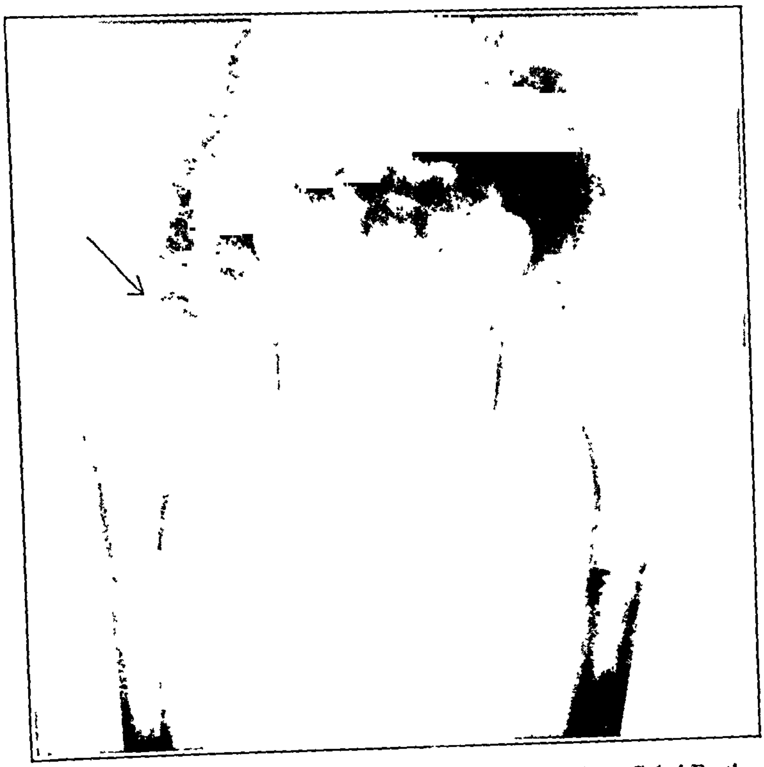

Fig. 1.—Osteochondritis deformans juvenilis coxae (Legg-Calvé-Perthes' disease).

I shall now proceed to a brief consideration of the various conditions that may be classed under the heading epiphysitis or osteochondritis.

OSTEOCHONDRITIS DEFORMANS JUVENILIS COXAE

Osteochondritis of the upper epiphysis of the femur was first described by Legg,[12] in February, 1910, later by Calvé,[13] in July, 1910, and still later by Perthes,[14] in October, 1910. The condition may be mistaken clinically for tuberculous coxitis, but the roentgen-ray appearance is characteristic (fig. 1). The bony nucleus of the femoral head flattens, becomes fragmented, the normal trabeculation is lost, and there is later increased density, because of the deposition of calcium salts. There is no blurring of the joint space nor are there any pathologic changes in the acetabulum or in the diaphysis of the femur. The final state after healing has occurred is a flattened condition of the head and a broadening of the femoral neck.

OSGOOD-SCHLATTER'S DISEASE

Separation of the tibial tubercle in adolescents was described by Osgood[15] in 1903 and by Schlatter[16] in 1908. It was at first thought to be simply a traumatic separation sometimes combined with fracture of the epiphysis of the tibial tubercle. This, of course, does sometimes occur; but the true Osgood-Schlatter's disease shows characteristic changes in the bone which stamp it as a true disease entity. The disease usually occurs in boys from 13 to 15 years of age; that is, at an earlier age than simple traumatic separation of the epiphysis, which is more common from 16 to 18 years of age. In the roentgenogram the bone nucleus is altered in shape and becomes irregular and fragmented, and the normal trabeculae disappear. The end result is complete restitution of the tubercle to its normal position and appearance.

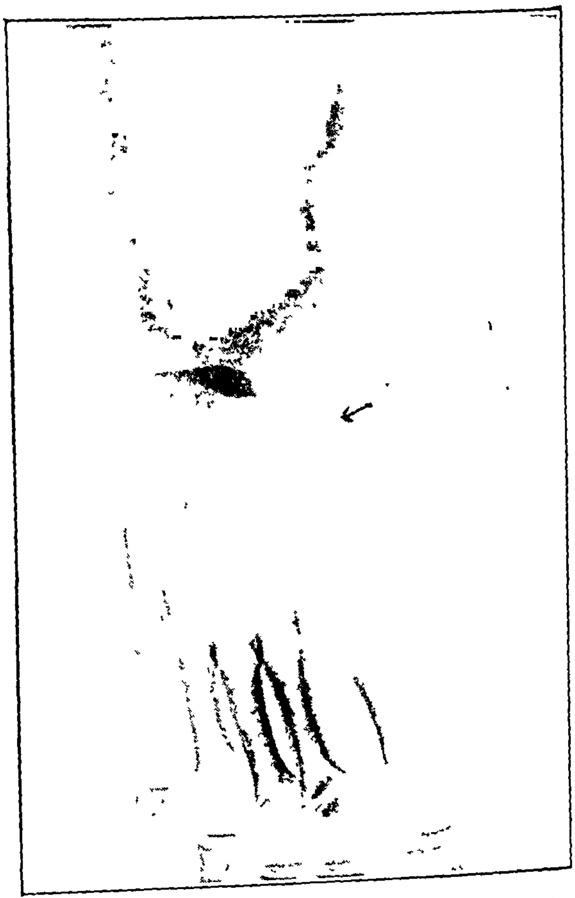

Fig. 2.—Kohler's disease of the tarsal scaphoid. (Case of Dr. G. W. Holmes, Massachusetts General Hospital.)

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[11] Hartley, J. N. J.: Osteochondritis Deformans Juvenilis, Schlatter's Disease, and Other Allied Conditions, Edinburgh M. J. **30**: 254-259 (June) 1923.

[12] Legg, A. T.: An Obscure Affection of the Hip-Joint, Boston M. & S. J. **162**: 202-204 (Feb. 17) 1910.

[13] Calvé, Jacques: Sur une forme particulère de pseudo coxalgie greffée sur des déformations caractéristiques de l'extrémité supérieure du fémur, Rev. de chir. **62**: 54-84 (July) 1910.

[14] Perthes, G.: Ueber Arthritis deformans juvenilis, Deutsche Ztschr. f. Chir. **107**: 111-159 (Oct.) 1910.

[15] Osgood, R. B.: Lesions of the Tibial Tubercle Occurring During Adolescence, Boston M. & S. J. **148**: 114-117, 1903.

[16] Schlatter, C.: Incomplete Tear-Fractures of the Tibial Tuberosity or Growth Anomalies? Beitr. z. klin. Chir. **59**: 518-546, 1908.

KÖHLER'S DISEASE OF THE TARSAL SCAPHOID

Unfortunately, two different conditions have been called "Köhler's disease," one of them affecting the scaphoid bone of the foot and the other the head of the second metatarsus.

Köhler's disease of the scaphoid bone occurs most commonly between the ages of 3 and 10, and is more common in boys than in girls. The clinical manifestations are often very slight, and consist of pain and swelling in the region of the tarsal scaphoids. The roentgen-ray appearance is characteristic (figs. 2 and 3). The bony nucleus of the scaphoid is smaller than normal, irregular in outline and of markedly increased density. The appearance is quite similar to that which is seen in osteochondritis deformans coxae with the exception that there is no fragmentation of the bony nucleus. The joint spaces remain clear and the surrounding tarsal and metatarsal bones are normal in appearance.

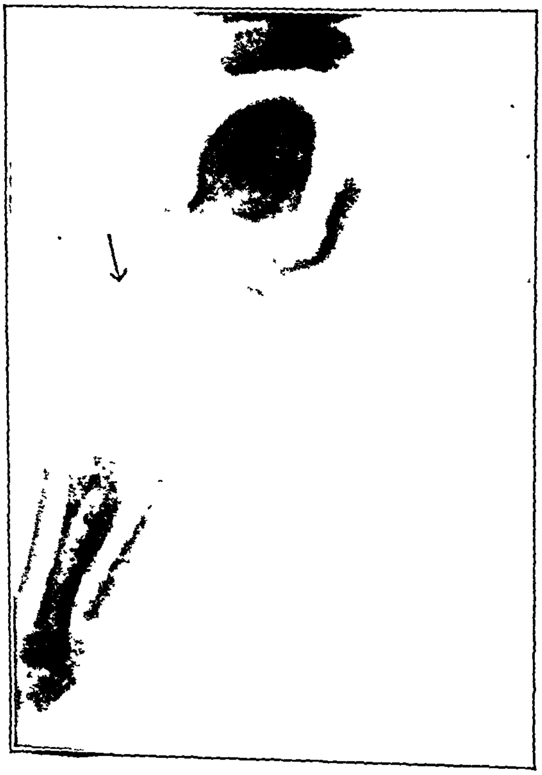
Fig. 3.—Same as figure 2, lateral view.

KÖHLER'S DISEASE OF THE SECOND METATARSUS

Köhler's disease of the second metatarsus was originally described by Freiberg,[17] who called it an infraction of the metatarsal head, and it is therefore occasionally called "Freiberg's infraction." Descriptive designations also are used, such as "juvenile deforming metatarsophalangeal osteochondritis"[6] and "metatarsal epiphysitis."

Köhler[18] gives the seven cardinal signs of the disease as follows: changes of the base of the proximal phalanges, considerable broadening of the joint space, striking irregularity of the latter, flattening of the head, calcium bodies in the joint capsule, thickening of the distal half of the metatarsal bone and disappearance of the neck.

Axhausen[19] recognizes five stages of the disease, depending on the roentgen-ray findings. The first stage is recognizable only by the clinical features of localized pain and tenderness and shows no roentgen-ray changes; the second stage shows flattening of the head and commencement of thickening of the metaphysis; in the third stage the flattening of the head and broadening of the shaft are increased, and there are present sclerotic areas in the head surrounded by transparent zones giving a sequestrum-like appearance; in the fourth stage the sequestrum-like appearance has disappeared and the entire head is flattened, its density is increased and the epiphysis is much broadened, but the thickening of the shaft is not so great; the fifth and final stage shows the picture of a marked arthritis deformans with joint changes and marginal elevations, in addition to the deformity of the metatarsal head. Axhausen believes that the histologic picture and the sequence of events in this disease prove quite definitely that the condition is not originally an infraction of a healthy bone. He ascribes it to interruption in nutrition of the bony epiphysis with subsequent pathologic fracture. The end result is analogous to arthritis deformans, and Axhausen suggests the name arthritis deformans infantilis or juvenilis of the metatarsophalangeal joint. He offers proof that the disease is not originally due to trauma by citing a case in which the head of the bone was examined histologically before the roentgen-ray examination showed any changes. In

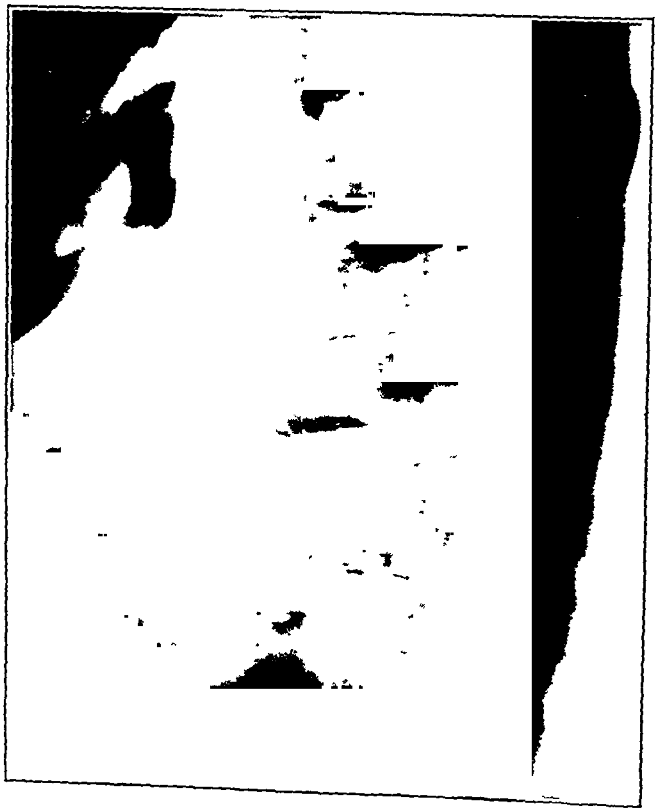
Fig. 4.—Vertebral epiphysitis.

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[17] Freiberg, A. H.: Infraction of the Second Metatarsal Bone: A Typical Injury, Surg. Gynec. Obst. 19: 191-193, 1914; Tr. South. Surg. & Gynec. A. 26: 171-174, 1914.

[18] Köhler, A.: On the First Announcements of the Typical Disease of the Second Metatarsophalangeal Joint, München. med. Wchnschr. 71: 109 (Jan 25) 1924.

[19] Axhausen, G.: The Anatomic-Pathologic Course of Köhler's Disease of the Head of the Metatarsal and of Perthes' Disease of the Hip, Arch. f. klin. Chir. 124: 511-542, 1923; The Pathologic Process in Köhler's Disease of the Head of the Metatarsus and in Perthes' Disease of the Head of the Femur, Zentralbl. f. Chir. 50: 553-558 (April 7) 1923; Köhler's Disease of the Metatarsophalangeal Joint, Med. Klin. 19: 561-565 (April 29) 1923.

this case, the whole bony epiphysis, together with its marrow, was completely necrotic. The necrosis was limited to the bony epiphysis and there was no evidence whatever of infraction.

Schreuder[20] is not convinced by Axhausen's presentations and adheres to the view that the condition is brought about by chronic trauma.

Whether the condition is primarily due to interference with the circulation and subsequent trauma or whether trauma is the primary cause, there seems no doubt that chronic injury is a large factor in this as well as in the other conditions under consideration in this paper. Axhausen's work seems to have been done carefully and his arguments seem very convincing to me. This disease of the head of the second metatarsal bone is similar in many characteristics to osteochondritis deformans coxae and to Köhler's disease of the navicular bone, but there is one striking difference: the two latter occur more frequently in boys while the former occurs more frequently in girls.

VERTEBRAL EPIPHYSITIS

In 1921, Scheuermann[21] described a condition which he called osteochondritis deformans juvenilis dorsi, an affection of the epiphyses of the bodies of the vertebrae. He thought this explained the condition called kyphosis dorsalis juvenilis, so-called schoolchild or muscular kyphosis.

Buchman,[8] in 1925, presented the results of the examination of 120 unselected cases of various spine affections in children, sixty-five of which were so-called idiopathic posterior and lateral curvature. Of these sixty-five cases, fifty-four, or 83 per cent, showed positive evidence of the type of epiphyseal disease described by Scheuermann. There were also three cases without any clinical spinal deformities which showed the roentgen-ray changes of vertebral epiphysitis; two of these were symptomless. The latter seem to show that the disease precedes and is not secondary to the spinal deformity.

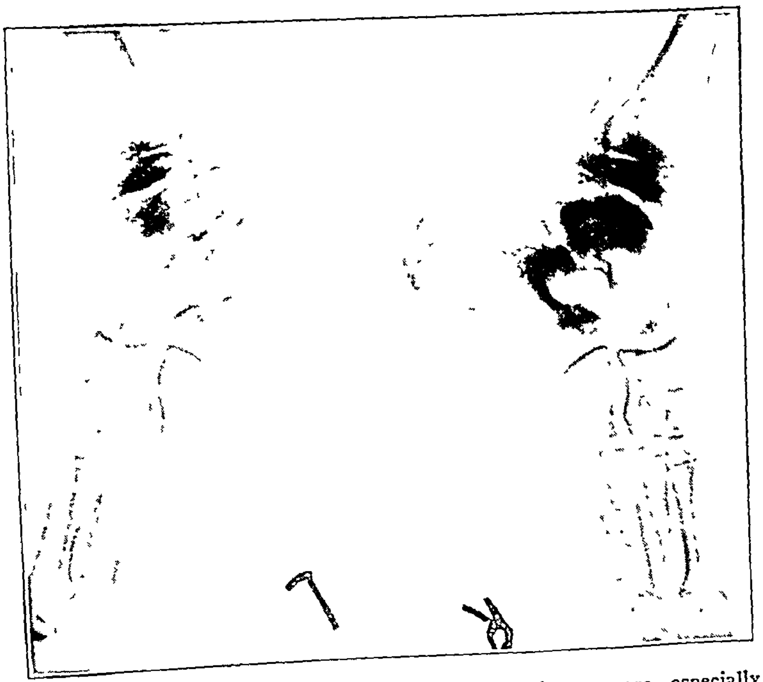

Fig. 5.—Epiphysitis of the os calcis. The changes are especially noticeable in the left foot. There is also evidence of inflammatory changes in the epiphyses of both tibias.

Vertebral epiphysitis appears to be a self-limiting disease most commonly affecting the dorsal region. Buchman made a study of the vertebral epiphyses in the normal spine, and states that both the superior and the inferior vertebral epiphyses appear at about 11 or 12 years of age. They appear first in the lower dorsal region and then extend up and down the spinal column. In the roentgenogram they show as small triangular shadows adjacent to the anterior-inferior and the anterior-superior angles of the bodies. Later they become elongated and appear as thickenings anteriorly and posteriorly, the two being connected by their linear shadows. Stereoscopically, they show as rings, thick at the periphery and thin in the center. Normally, the intervertebral spaces are clear. Any gross deviation from the foregoing findings in time of appearance of the epiphyses, in the order of their appearance or changes in contour, Buchman states, are evidence of disease.

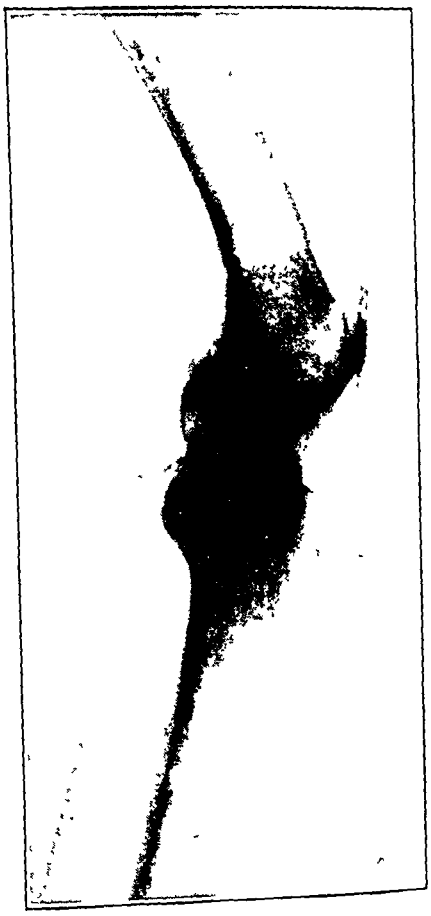

Fig. 6.—Osteochondritis dissecans.

The roentgen-ray findings in vertebral epiphysitis are as follows: The epiphyses become enlarged, ragged in contour and indistinct in outline; the superior and inferior margins of the bodies become ragged and the joint spaces cloudy and indistinct. The disease occurs in patients between 10 and 20 years of age and is characterized clinically by symptoms of fatigue, backache and tenderness at various points along the spine. A considerable proportion of the patients have spinal deformity.

The following is a somewhat typical case of vertebral epiphysitis:

> A girl, aged 15 years, unusually tall for her age, was observed, about a year before I saw her, to be becoming round shouldered. She complained of pain in the back, especially when she sat down. There was a rather marked kyphosis in the lower dorsal and upper lumbar region. The roentgen-ray examination showed the presence of slight scoliosis and marked kyphosis in the lower dorsal and upper lumbar region (fig. 4). The bodies of the three lower dorsal and the two upper lumbar vertebrae were somewhat beveled and irregular on their superior and inferior aspects. The epiphyses, where they could be seen, were fragmented and indistinct, and the joint spaces were hazy.

Buchman believes, as Scheuermann did, that vertebral epiphysitis is analogous to osteochondritis deformans juvenilis coxae in etiology and pathology, and also to Schlatter's and Köhler's diseases and to the multiple epiphysitis of adolescence.

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[20] Schreuder, O.: Can the Disease of the Second Metatarsus (Köhler) be the Result of a Chronic Trauma? Deutsche Ztschr. f. Chir. 178: 145-159, 1923.

[21] Scheuermann, H.: Kyphosis dorsalis juvenilis, Ztschr. f. orthop. Chir. 41: 305-317, 1921.

MISCELLANEOUS CONDITIONS CLASSIFIABLE AS EPIPHYSITIS

Epiphysitis of the Os Calcis.—A pathologic process of the developing epiphysis of the os calcis has been mentioned by various writers during recent years. Lewin[22] states that the condition is fairly common in boys between the ages of 9 and 13, and that it is probably due to both external and internal trauma and to local circulatory changes during the critical period of growth.

Figure 5 shows the usual roentgen-ray appearance of epiphysitis of the os calcis. This was the case of a boy, aged 10, who complained of pain in his knee, ankle and foot. The changes are especially noticeable in the epiphysis of the os calcis of the left foot. There are areas of rarefaction alternating with areas of increased density. In addition to the changes shown in the os calcis of each foot, it will be noted that definite pathologic changes are present in the lower epiphyses of both tibias. Both hips and both knees were examined but showed no evidence of Legg's or Schlatter's disease. Six months later, the changes in the os calcis had entirely disappeared and the epiphysis had regained its normal cancellous structure.

Osteochondritis Dissecans of König.—König[23] first described this condition in 1887, and Axhausen[24] made a critical study of it in 1924. The latter holds the same views with regard to the pathology of this disease as he does regarding Legg's and Köhler's diseases; namely, that it is an aseptic necrosis of the epiphysis followed by mild injury. The free joint bodies originally described by König are explained by Axhausen as the results of the pathologic compression fracture of the dead epiphysis with the formation of a wall of bony débris which interferes with bony substitution and forces the process of delimitation to appear (fig. 6).

Pathologic processes analogous to those described above have been reported in the developing olecranon, in the epiphyses of the ilium, in the semilunar bone, and elsewhere. It seems probable that no epiphysis in the body is immune to the disease. It is the general opinion that all of these conditions which pass under various names are the same pathologic entity modified only by the particular location in which they occur.

1909 Massachusetts Avenue.

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[22] Lewin, Philip: Apophysitis of the Os Calcis, Surg. Gynec. Obst. **41:** 579-582 (Nov.) 1925

[23] König: Ueber freie Körper in den Gelenken, Deutsche Ztschr. f. Chir. **27:** 90-109, 1887.

[24] Axhausen, G.: Regarding Osteochondritis Dissecans of König, Klin. Wchnschr. **3:** 1057-1060 (June 10) 1924. Regarding the Walling-Off Process in Epiphyseal Bone (Osteochondritis Dissecans of König), Virchow's Arch. f. path. Anat. **252:** 458-518, 1924.

Psychopathology Is Not Psychiatry.—Psychopathology connotes, not a mere description of mental symptoms, but an endeavor to explain disorder or certain disorders in terms of pyschological processes. The distinction expressed here is of the greatest importance for a clear understanding of the subject. The description of mental symptoms constitutes clinical psychiatry, and is as distinct from psychopathology as clinical medicine is from pathology. In the former case we are concerned with the recording of clinical phenomena, in the latter with the elucidation of the processes responsible for these phenomena. To enumerate the delusions which a patient expresses is not psychopathology but clinical psychiatry, and we do not pass beyond this until we endeavor to explain the incidence of the delusions in terms of causal processes. Moreover, this explanation is only psychopathological if it is couched in the language of psychology and built up of psychological conceptions.—Hart, Bernard: *Lancet* 1:585 (March 20) 1926.

OSTEOMYELITIS VARIOLOSA

REPORT OF A CASE OBSERVED DURING THE ACUTE STAGE *

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The osteomyelitis of smallpox divides itself into two distinct groups. The first, a rather infrequent complication, is the suppurative type, which occurs as a result of secondary infection. The second is due to the variola itself, occurs during the course of the disease, and has all the histologic characteristics of the typical smallpox lesion. This type of osteomyelitis is nonsuppurative and resembles closely the lesions found in orchitis variolosa. Chiari,[1] in 1892, described osteomyelitis variolosa in detail. In a large number of necropsies on smallpox patients, he found necrotic foci widely distributed through the bone marrow of the long bones and, in a few cases, in the sternum and vertebrae. The lesions were found as early as two days and as late as two months after appearance of the eruption, without any evidence of suppuration, even in the late cases. Although he found this condition

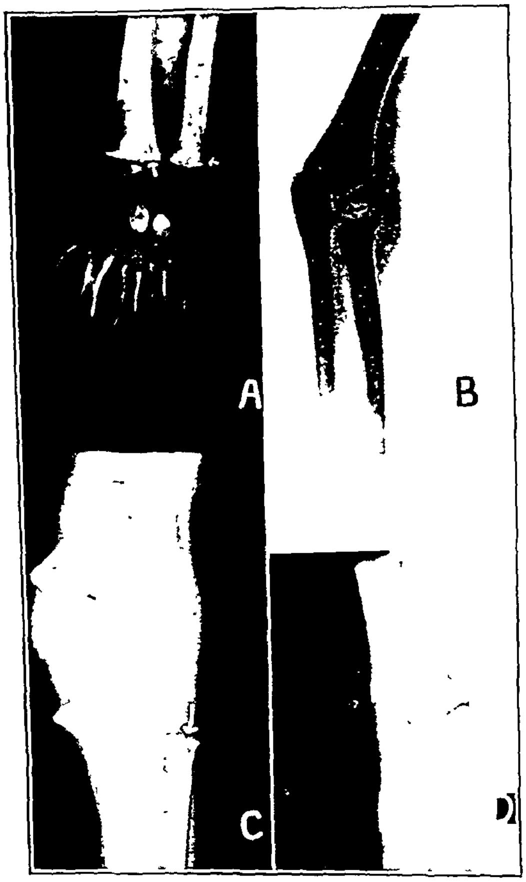

Fig. 1.—Appearance of the wrist, elbow, knee and ankle, seven weeks after onset, showing area of destruction in the diaphysis just at the epiphyseal line: The roughening of the epiphysis itself on the diaphyseal side is in contrast to the normal articular surface; the similarity of the process in each region and the presence of only two ossific carpal nuclei should be noted.

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* From the Departments of Pediatrics and Roentgenology of the Minneapolis General Hospital.

* Read before the Section on Diseases of Children at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[1] Chiari: Beitr. z. path. Anat. u. z. allg. Pathol. **13:** 13, 1893.

in 86 per cent of the cases he examined, there are very few clinical case reports.

In 1910 and 1913, Musgrave and Sison[2] reported twenty cases of marked bone deformities in adults from whom they obtained a history of smallpox in childhood. The fact that the bone disturbance began to manifest itself first during the course of the attack of variola, together with the work of Chiari, led them to believe that this was the etiologic factor. From the character of the deformity—a shortening of the long bones with no disturbance in circumferential growth—they inferred that the site of the disease was either in the epiphysis or in the area of growth. Since then there have been several other case reports. W. L. and C. P. Brown[3] have recently reviewed the whole literature adequately.

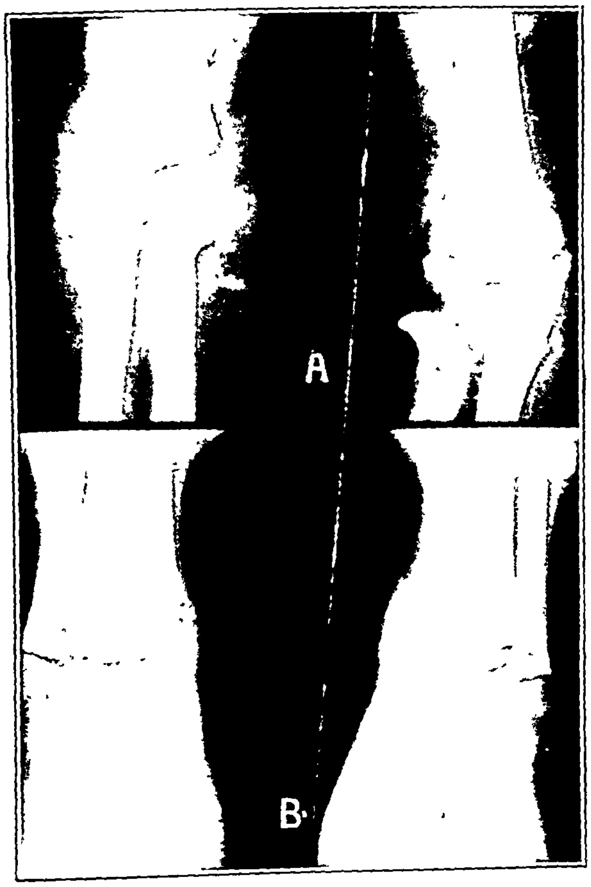

Fig. 2.—Elbows, *A*, and ankles, *B*, about five months after onset: The repair process, the new bone formation on the humerus, and the roughened ends of the diaphyses are shown; the exactly symmetrical character of the process should be noted.

It is notable, however, that there has never been a clinical report of this condition observed during the acute stage. The case reported below is therefore of considerable interest, as we have been able to observe this condition in all its stages.

REPORT OF CASE

B. R., a white boy, aged 4 years, born in America, of Irish parentage, was admitted to the contagious department of the Minneapolis General Hospital, Dec. 18, 1924, suffering from pharyngeal diphtheria. He had been ill four days. He was given antitoxin; the recovery was normal and, the culture becoming negative, he was discharged to his home, December 28. He was still weak and had not fully recovered his strength when he became very ill again, Jan. 1, 1925.

He developed a paralysis of the soft palate at this time, from which he later recovered completely. Two days later, a generalized rash appeared. At about the same time it was noted that he would not move his arms. A physician diagnosed the rash as smallpox, which was then epidemic, and considered the difficulty of movement of the arms to be postdiphtheritic paralysis, along with that in the soft palate. He was readmitted to the hospital, January 7, presenting a typical variolar eruption, with some vesicles already appearing. There was at this time pain on motion of the wrists and elbows, which in a few days became slightly swollen and tender.

The variola ran a moderately severe course and was complicated by the appearance of a pemphigus eruption, January 12. On the 15th, the pains and the swollen, tender joints were noted in both arms and legs. A week later, he complained of pain in the neck, which was stiff and tender. The rash gradually disappeared.

About twenty-four days after the appearance of the eruption, he was seen by one of us in consultation. The evidences of variola were almost gone, but there was a diffuse, rather fusiform swelling of almost all the joints, with a rigidly held, tender neck. There was evidence of acute bronchitis. The temperature at this time ranged from 100 to 102 F. The condition was thought to be acute polyarticular arthritis, and he was transferred to the pediatric service.

He continued to have a high temperature; the leukocyte count was 22,000, and he did not respond well to the usual treatment. In view of these circumstances, it was thought that acute arthritis was insufficient to explain the symptoms. It was found necessary to make a transfusion several times, with apparently good results.

February 13, six weeks after the onset, the first roentgenograms of the joints were made. One of the wrist, elbow, knee and ankle is shown in figure 1. The appearance is striking. There was no abnormality of the articular surfaces, but a distinctly destructive process at the end of the diaphysis, just at the epiphyseal line. The latter, as well as the diaphysial side of the epiphysis, was roughened and irregular. The area of growth itself, being cartilaginous, cannot be demonstrated in the roentgenograms, but no doubt was attacked by the process. The lesion was notable for its perfect symmetry, widespread invasion, and localization to the region of the epiphyseal line. The wrists, elbows, shoulders, knees, ankles and the first cervical vertebra were included, the hip being the only large joint that escaped. The lesions in every case were bilateral and almost equal on the two sides. The marked destruction of the first cervical vertebra, with anterior dislocation of the second, can be seen in figure 3 *A*. The appearance of the lesion in the long bones was slightly suggestive of congenital syphilis. The Wassermann reaction was negative. The diagnosis of osteomyelitis variolosa, both clinically and roentgenologically, became obvious at this time.

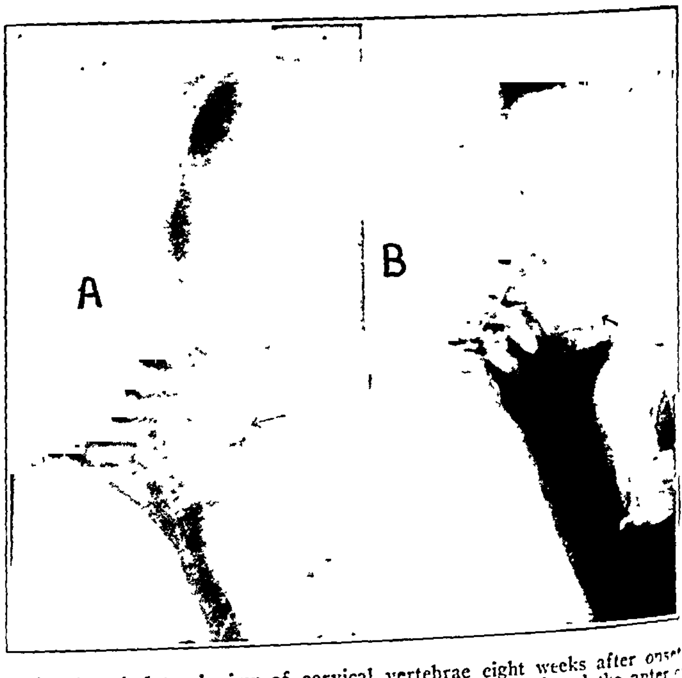

Fig. 3.—*A*, lateral view of cervical vertebrae eight weeks after onset; the marked destruction of the body of the first cervical and the anterior dislocation are well shown; *B*, similar view nine months later; the extensive new bone formation producing union between the first and second cervical vertebrae can be distinguished.

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[2] Musgrave and Sison: Philippine J. Sc. **5**: 553, 1910; **8**: 67, 1913.

[3] Brown, W. L., and Brown, C. P.: Osteomyelitis Variolosa, J. A. M. A. **81**: 1414 (Oct. 27) 1923.

Repeated roentgenograms were made and showed progressive destruction, then repair. Figure 2 indicates the condition in the elbows and ankles about five months later. The repair process with new bone formation on the humeri and the roughened ends of the diaphyses are well shown. The exactly symmetrical character of the lesion should be noted.

Extension was immediately applied to the head by the orthopedic consultant, Dr. Paul Giessler. The patient continued to have a fluctuating temperature with leukocytosis until the latter part of March, almost three months from the onset, when it became normal. The swelling and tenderness in the joints gradually disappeared, and the patient could move them without difficulty. There was never any fluctuation or other evidence of suppuration, aside from the temperature and leukocytosis.

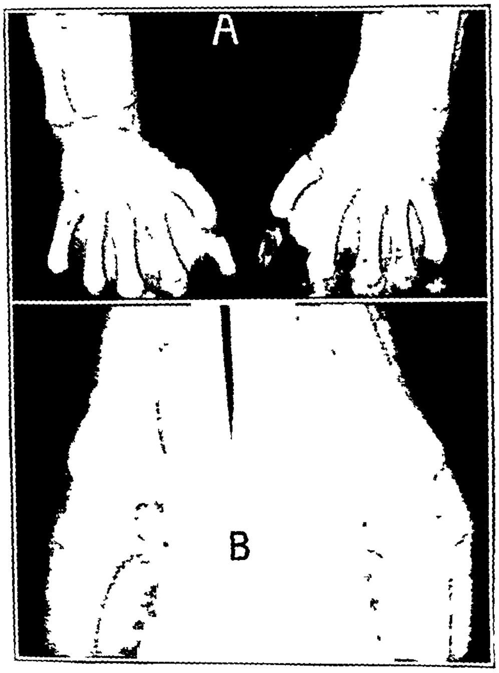

Fig 4—*A*, condition in wrists eleven months after onset; there is practically complete repair, the presence of five ossific nuclei in the left and two in the right should be noted, *B*, condition in the elbows eleven months after onset; repair is not so complete and there is still irregularity of the ends of the diaphyses; the symmetry of the process is again shown.

The general condition improved notably following transfusions and general supportive treatment. The patient was finally discharged under the observation of Dr. Giessler, who made a jury-mast for the support of the head.

The final roentgenogram of the cervical vertebrae, taken Dec. 3, 1925, eleven months after onset, is shown in figure 3 *B*. The evidence of repair is obvious. The dislocation is still present, and union has developed between the atlas and the axis. Figure 4 *A* and *B* reveals the condition of the wrists and elbows at the time of discharge. The former appear fairly normal, but the proximal ends of the radius and ulna show irregularity with new bone formation and evidence of repair. The epiphyses have not appeared there as yet, so it is difficult to determine how marked the process was. The presence of five ossific nuclei in the left and only two in the right wrist is worthy of note. The latter represents a marked delay for a 5 year old child, due no doubt to the infectious process.

Figure 5 *A* and *B* represent the last roentgenograms of the knees and ankles. Some destruction is still present in the proximal end of the fibula, with evidence of repair taking place. The region of most interest is the distal end of the tibia, where repair has taken place to such an extent that there is beginning closure of the epiphyseal line.

The child appears normal at this time except for holding the head abnormally forward. There is good movement of the head, neck and all the extremities.

COMMENT

A case of smallpox in a child presents a clinical picture of acute polyarticular arthritis, the symptoms in the arms having appeared shortly after the eruption and the involvement of the other joints following rapidly. Roentgenographic examination revealed a symmetrical, widespread, destructive process at the epiphyseal line of the long bones, and in the first cervical vertebra, which became dislocated. The acute condition of the bones continued for two months after the eruption of the variola disappeared, being accompanied by rise of temperature and by leukocytosis. Repair finally occurred with almost complete recovery except for the dislocation of the first cervical vertebra.

The rapidity of the onset, the symmetrical widespread dissemination, the involvement of a vertebra in the process, and the absence of suppuration, all coincide with Chiari's findings. The extremely selective character of the lesions attacking only the region of the area of growth confirms the idea of Musgrave and Sison, which they deduced from the deformities that they observed. The findings in the distal end of the tibia as shown in figure 5 *B* indicate the manner in which these deformities may occur. If the repair process continues here, and there is closure of the epiphyseal line at this early age, marked shortening of the tibia will result; if the fibula continues to grow, a distortion of the foot very similar to their descriptions must occur.

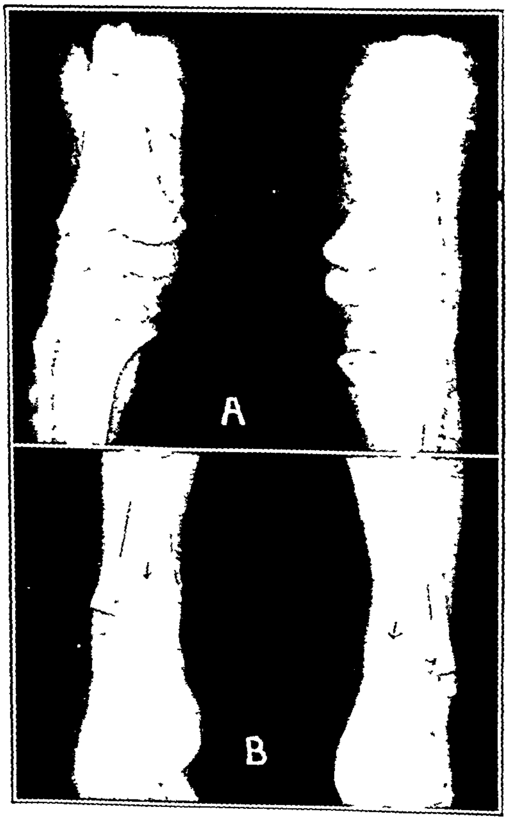

Fig 5—Knees, *A*, and ankles, *B* eleven months after onset; repair is not complete in the proximal end of the fibula; the distal epiphysis of the tibia should be noted, it is almost united in its middle portion to the diaphysis by the repair process

The dislocation of the first cervical vertebra without serious symptoms is notable. The apparently full recovery is also of interest.

The rarity of this condition is shown by the fact that we made roentgenographic studies in a large number of other cases of smallpox, many of which patients complained of bone and joint pains, without discovering any other similar case. It is notable that in the recent severe epidemic, which was thoroughly studied, no other case has been reported. This may be due to the lack of roentgenographic facilities, which are usually difficult to obtain in the contagious hospitals. It is obvious that the roentgen-ray examination was indispensable in this case.

SUMMARY

In a case of nonsuppurative osteomyelitis variolosa, observed during the acute stage,destructive lesions about the epiphyseal lines of all the long bones and in the body of the first cervical vertebra were observed in a child, appearing almost simultaneously with the eruption of the variola.

Dislocation of the first cervical vertebra occurred. Eleven months later, practically complete repair of all the lesions was present. An abnormally early closure of the epiphyseal line in both tibias appears to be taking place, which explains the manner of production of the bone deformities reported by other observers.

ABSTRACT OF DISCUSSION

Dr. Orville Egbert, El Paso, Texas: As Dr. Brown is not here, I will show a few of his slides which represent the series of his cases, and a few others that illustrate the sequelae of this peculiar condition. As the author's paper indicated, the destructive process is in the epiphysis of the bone. The longitudinal growth of these bones is destroyed, and grave deformities develop because of the normal growth of the companion bone.

TWENTY-FIVE YEARS OF CONGENITAL SYPHILIS IN BOSTON

A STATISTICAL AND COMPARATIVE STUDY *

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Congenital syphilis plays a small part in the individual professional life of any one of us, but in the mass its destructive activities in fetal and infantile life are so appalling that any effort to reduce its incidence and mortality is well worth while. The present study is based on records available in all departments of the Children's Hospital and the Infant's Hospital, from Jan. 1, 1901, to Dec. 31, 1925. The diagnosis was made in 1,446 cases. On careful checking up, only 581 cases were accepted for use, the others being discarded on account of too short a period of observation or insufficient or incomplete data. The records analyzed for this paper are those only which have satisfied all criteria for the diagnosis of congenital syphilis.

INCIDENCE

The numbers of syphilitic babies in a given community have been estimated by various observers to be as high as 3 or 4 per cent of the total population. The most believable figures are those compiled from known hospital residents and are given in table 1.

INCIDENCE BY RACIAL STOCK

The accompanying tables afford comparison between Hinton's[1] observations as to the incidence in relation to racial stock among pregnant women, and my own in relation to the patients in this series. The term "Anglo-Saxon" is used to denote Americans of that stock in distinction to Canadian, English and Scotch immigrants. The determination of racial stock by type of name was found to be fallacious in certain instances, notably one in which "Dooley" turned out to be a negro baby, and the possessor of the name of one of Boston's oldest and proudest families turned out to be a Russian Jew of the first generation born in this country. I have recalculated Hinton's figures and have based my own on the percentage incidence per racial stock group to the total number of syphilitic patients, rather than the percentage of syphilitic patients occurring in each racial group.

Table 1.—*Incidence of Syphilis*

Reporter	Source	Cases	Per Cent
Jeans	Abt's Pediatrics	Pregnant women	10
		White babies	1
		Negro babies	15
		Poor whites	2
		Moderate and well-to-do whites	1
		Latent	1
Churchill	*Hospital*	Total	3
Findlay	Am. J. Dis. Child. 28 : 133 (Aug.) 1924	Old	10
		New	1
Ladd	Personal communication	700 institution children; 3 doubtful Wassermann reactions	0.0
Hinton	Am. J. Syph. 7 : 155 (Jan.) 1923	Pregnant women	4.18
Webber	Personal communication	Massachusetts Department of Public Health, 1918-1925	0.006
Sylvester	Hospital		0.6

MORTALITY

It is obvious that in the very nature of things no accurate determination can be made of the total number of fetal deaths caused by maternal syphilis. Williams[2] credits syphilis with being the greatest single cause. Other observers, from material gathered in pregnancy and lying-in clinics, estimate that from 15 to 25 per cent of all fetal deaths are due to syphilis.

Among living children very few estimates have been made as to the total death rate from syphilis during the first year. Jeans[3] states that from conception to the end of the first year the total mortality among syphilitic babies is about 50 per cent. Webber[4] reports 1,709 syphilitic deaths out of the 21,191 cases reported to the Massachusetts Department of Public Health during the last eight years. This is 8.5 per cent. In this study, the total mortality was 51.8 per cent. I have divided the cases into three groups:

1901-1914 (pre-Wassermann): recorded mortality, 58.2 per cent. Undoubted additional mortality, 22.8 per cent.

1915-1919 (Wassermann and arsenic), 33 per cent.

1920-1925 (organized clinic and social service), 21.5 per cent.

During the remainder of this paper I shall refer to the mortality of the first period as 85 per cent, from the fact that the additional 22.8 per cent have every right, by reason of the circumstances of their disappearance from the clinic and their extremely poor condition at the last recorded observation, to be regarded as dead.

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* From the Medical Services of the Children's Hospital and of the Infant's Hospital.

* Read before the Section on Diseases of Children at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Hinton, W. A.: Am. J. Syph. 7: 155 (Jan.) 1923.
2. Williams, J. W.: Obstetrics, 1915.
3. Jeans, in Abt's Pediatrics.
4. Webber: Personal communication to the author.

MORBIDITY

Syphilitic children are notoriously sickly. They pick up colds, and have otitis media, pneumonia and other nonsyphilitic infections with regularity. A study was made of all cases by groups as above, and morbidity established on the basis of more frequent superimposed infections than the average child had a right to have, and a recorded weight or condition of 10 per cent or more below normal:

Table 2.—*Ancestry*

	Hinton (Pregnancy), Per Cent	Sylvester, Per Cent
Anglo-Saxon	23.6	19.2
Canadian	3.0	3.6
English	1.5	2.0
German	0.0	1.5
Irish	5.0	36.5
Jewish	3.6	3.2
Negro	24.25	6.6
Italian	8.6	21.4
Scattering	3.6	7.0

1901-1914, 85 per cent.
1915-1919, 50 per cent.
1920-1925, 35 per cent.

INFLUENCE OF THE WASSERMANN REACTION ON DIAGNOSIS

The Wassermann laboratory was organized and developed at the Harvard Medical School, by the state of Massachusetts, in 1915. Previous to that time we had had occasional and sporadic Wassermann tests done, but the results were so contradictory and our experience in getting blood from small babies so discouraging that it was not until the opening of the laboratory in 1915 that we made regular and routine use of the reaction. Its usefulness for diagnosis proved to be very disappointing in the early cases. We have learned by sad experience that a baby's serum is very often negative until he is 2 or 2½ months old; that his mother's serum is often negative until the baby is 5 or even 6 weeks old, and that the father's blood is often negative through treatment or even through failure to have the disease. In the so-called latent cases, however, the Wassermann test is the only true guide to diagnosis.

MORTALITY IN RELATION TO AGE AT ONSET OF SYMPTOMS AND AGE AT WHICH TREATMENT WAS BEGUN

The accompanying charts show in the black dots the percentage of fatal cases whose history indicates the age at onset of manifestations. The crossed dots indicate the age at which these groups appeared for treatment. It is evident from these charts that the mortality of patients appearing with a story of lesions manifest as early as from 3 to 4 weeks is tremendous. It is manifest that the mortality among patients appearing as late as 4 months is low, but it must be remembered that most of the patients have either died or appeared for treatment before the age of 4 months. One is tempted to the conclusion that the appearance of lesions in the first three or four weeks of life is indicative of an early and severe fetal infection in which irreparable injury has been done by the time that the child is a few weeks old. One is also tempted to draw the conclusion that the high relative mortality of patients appearing at 3 and 4 months of age is due to the fact that by that time organic changes have taken place which are incompatible with life. The accompanying photomicrograph of the liver of an untreated syphilitic baby, dying at 4 months, is corroborative of that theory. It shows fibrosis of liver; pressure atrophy and necrosis of liver cords; fibrosis, essentially in the sinusoids; a slight attempt at regeneration and proliferation of the bile ducts, and few mitoses.

INFLUENCE OF ARSENICAL THERAPY

Early in 1915, we began to use neo-arsphenamine intravenously, feeling our way along to a technic not much unlike that reported from other hospitals. At the same time, the care of syphilitic babies tended to become less haphazard and to be concentrated into the hands of one man. The difficulties of that procedure were enormous. At that time, every hospital looked on a syphilitic baby with the same welcome affection as a measles or smallpox patient, and made every effort to exclude him; and if he was inadvertently admitted, he was incontinently discharged as soon as the diagnosis became known. Therefore, the cases were treated in the Children's Hospital outpatient department as they happened to come along. This required waiting for each Wassermann set to be boiled separately; waiting for the solution of neo-arsphenamine to come up from the laboratory, and waiting for the already overworked nurse to find time to come in and help hold the baby. Such waiting was very discouraging to mothers. Our several deaths and many severe reactions frightened them; and the lack of an adequate follow-up system allowed many cases to be "lost." Owing to the chaotic conditions of this period and the fact that our personnel was extremely small on account of the war, it was impossible to establish the contact between mothers and physicians which produces the confidence and understanding that results in cooperation on their part.

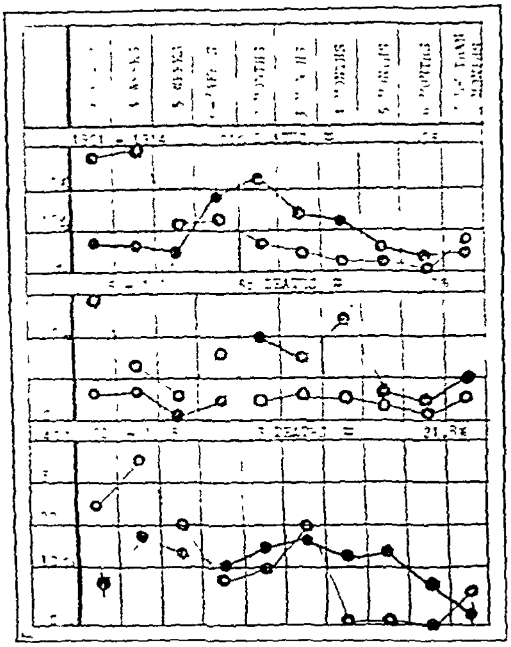

Fig. 1.—Relation of age at onset of syphilis to mortality (solid dots) and age at beginning of treatment to mortality (crossed dots).

Late in 1919, the syphilis clinic was organized along the following lines: A special day was set apart on which known syphilitic patients were to report in a separate room of the outpatient department. On that day, the chief of the syphilitic clinic is on duty, and devotes all his time to this clinic. He has one, at least, and, if especially fortunate, two, assistants; a special nurse, and a volunteer assistant clerk, who is under the direction of the social service department. The sterilizing apparatus and material for making solutions are on tables conveniently adjoining the patient's table. The patients come in one at a time from their special waiting room, so that they are alone in the treatment room. A careful physical examination is made at each visit, the baby's feeding looked after with great care, and any superimposed infection attended to. Every effort is made to obtain the confidence and cooperation of the mother, and it is explained to her that she must not only try to get this particular baby cured but must also get herself cured for the sake of and in the promise of perfectly well babies in the future. Both parents are conducted to other hospitals for treatment of their syphilis. Record is made at each visit of the patient's weight, general condition and any other pertinent facts, and on a specially ruled card are recorded the facts summarizing the syphilitic phase of this case such as dosage or Wassermann reaction. Under this practice, mothers appear to be much more willing to continue to bring their children for treatment over long periods, which gives us an opportunity to take care of the patient's general welfare as well as its syphilis. It is not too surprising, therefore, that the mortality and morbidity for this period have been further reduced to 21.5 and 35 per cent, respectively.

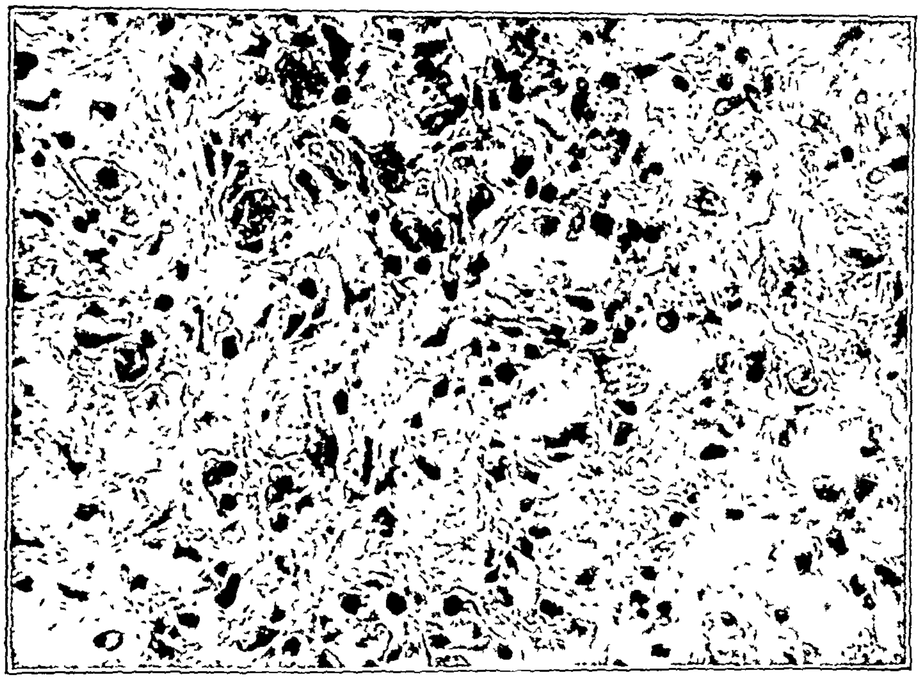

Fig. 2.—Section of liver of untreated syphilitic baby dying at 4 months.

A tabulation representing the living patients in relation to their age at the time of appearing for treatment shows some rather startling features. This tabulation may well be called their expectation of life. In the first group (1901-1914), expectation of life at 3 weeks was zero and increased slowly until at from 6 to 8 weeks it was 7.2 per cent, thereafter decreasing rapidly to zero again at 5 and 6 months. In patients appearing at later than 6 months there was an increase to 0.12 per cent, which I attempted to explain on the ground that these children were tough enough, or had a mild enough infection to enable them to live through the first six months or more. The second group (1915-1919) shows hardly any betterment at from 3 to 4 weeks, but rises rapidly to 22.8 per cent at from 6 to 8 weeks, and then decreases rapidly to 1 per cent at 5 months and a fraction of 1 per cent at 6 months and later. The third group (1920-1925) fails to show much of any improvement at 3 and 4 weeks, but rises rapidly to 31 per cent at from 6 to 8 weeks, and again falls rapidly to 2 per cent at 4 months, a fraction at 5 and 6 months, and 6 per cent at later than 6 months.

It is obvious that no change in method of handling has made any real difference in the mortality of children appearing for treatment as early as 4 weeks or as late as 4 months. It is equally obvious that a tremendous change for the better has taken place in those children appearing at from 5 weeks to 2 months of age.

SPECIAL STUDY OF THE INFLUENCE OF SULPHARSPHENAMINE

In August, 1923, at the request of the venereal division of the Massachusetts Department of Public Health, I agreed to give sulpharsphenamine alone for a short time to a few of our early patients. The immediate results were so surprisingly good, the ease, convenience and painlessness of administration so striking, and the absence of any general reaction whatever so impressive, that we have continued to use this agent alone in sixty-seven of our subsequent cases. Our usual program is the weekly intramuscular injection of from 10 to 20 mg. per pound of body weight, in 10 per cent concentration, for twelve doses; then a month's vacation followed by the Wassermann test. If the Wassermann reaction is negative, the series is repeated at one-half the corresponding dose of the first series. If positive, the series is repeated at one and one-half times the corresponding dose of the previous series. So far, nearly every early case has become negative at the end of the first series and remained so through the two and one-half year period of observation to date. Every early case in which the patient appeared for treatment under 3 months old, which has been positive at the end of the first series, has become negative at the end of the second and remained so to date. The influence of sulpharsphenamine on the old and latent cases, many of which have been under treatment with neo-arsphenamine for more than three years and were still positive, has been surprisingly good. More than 50 per cent of these patients have received more than thirty-six doses and the reaction has become negative. None have yet become negative in which less than thirty-six doses have been given. A startling result in relation to the central nervous system has become apparent, as compared with the earlier groups of cases. In the first group, the percentage of cases developing central nervous system manifestations, while under treatment, was 10 plus per cent, and in the second, 4 per cent. The third group has to date developed not one single case of central nervous system syphilis while under treatment with sulpharsphenamine.

It is interesting to note what evidence we find of the comparative effectiveness of mercury, neo-arsphenamine and sulpharsphenamine. It seems to me that a fair basis of comparison lies in the time of the disappearance of various lesions under treatment with these agents. We have written, photographic and roentgen-ray evidence that lesions of the skin, bones and viscera may develop, or if already developed may become much worse and more diffuse during long periods of administration of mercury. For instance, we have a photograph showing skin lesions that developed at the end of three weeks of mercury, and increased in extent and severity for three weeks more. Again, we have roentgen-ray films showing the development and diffusion of periosteal lesions under mercury for three months, these lesions completely disappearing at the end of three weeks under sulpharsphenamine. Again, we have roentgen-ray films of a baby, aged 5 weeks at admission, showing tremendous periostitis and erosion at the metaphysis, resulting in dislocation of the epiphysis, almost completely healed after five doses of sulpharsphenamine. On the other hand, we have roentgen-ray films showing gummas of the bones in late cases which have been under treatment for from two to two and one-half years, as yet not completely healed. Table 3 is a compact summary of all our evidence.

Table 3.—*Comparative Effectiveness of Mercury, Neo-Arsphenamine and Sulpharsphenamine as Shown by Time of Disappearance of Lesions*

Early	Skin	Viscera	Bones	Late	Skin	Viscera	Bones
Mercury.	6 weeks to 6 mos	3 mos. to 6 mos	3 mos. to 6 mos +	......	3 weeks to 6 mos	6 mos +	Years +
Neo-arsphenamine	1-2 weeks	2-3 weeks	2-4 mos.		3 weeks	5-8 weeks	Years +
Sulpharsphenamine	1-3 weeks	2-4 weeks	3 weeks to 2 mos.		2-4 weeks	2-4 mos	Years +

IMPORTANCE OF EARLY RECOGNITION AND EARLY INAUGURATION OF EFFECTIVE TREATMENT

It is perfectly obvious that the factors of arsenic, Wassermann reaction, organized clinic and social service have caused a tremendous reduction in mortality and morbidity, but only at what appears to be a sort of critical period; namely, between the ages of 5 weeks and 2 months, or a trifle over. It is equally obvious that the cases appearing for treatment much before or much after this period have obtained very little corresponding reduction. It is apparent, therefore, that we must develop a new and more effective method of treatment on the very early cases; that we must disregard a negative Wassermann reaction and rely on history and careful physical examination for diagnosis and, consequently, early treatment, in time to get our patients to come in for treatment within the limits of this critical period. Our failure in the very early and later cases does not appear to have any immediate remedy, except in prevention. It is a matter of common knowledge that a very little treatment during pregnancy will allow the fetus to be born at full term, possibly nonsyphilitic, but more usually presenting lesions within the time limits of the critical period. It is also an accepted fact that most syphilitic mothers, treated adequately during their pregnancy, give birth to nonsyphilitic children. Fourteen of the forty-seven families now being followed by our social service have now gone through pregnancy and produced thirteen nonsyphilitic and only one syphilitic baby. Dr. Jackson tells me that since the inauguration of the Wassermann test and the treatment of positive mothers as a routine in the pregnancy clinic at the Boston Lying-In Hospital, the incidence of recorded congenital syphilis has been reduced by at least 50 per cent. It seems to me that this measure offers the most effective means of taking care of that group of babies whose lesions appear before the critical period, and whose mortality is still tremendous.

FURTHER PREVENTIVE MEASURES

It is improbable that public morality will undergo any radical change during our lifetime. It is improbable that the number of illegitimates (among whom the incidence of congenital syphilis is very high) will undergo any material reduction. It is probable, however, that a more complete understanding of the functions of sex, and of the dangers from venereal disease, as explained by mothers to daughters and fathers to sons, may effect a considerable reduction in the incidence of adolescent syphilis and its consequent congenital syphilis. In the possibilities of the law, however, we have opportunity for reaching in the most effective way the greatest number of congenital syphilitic patients, that is, babies born in wedlock of syphilitic parents, through the requirement from both parties of a negative Wassermann reaction as a condition to obtaining the marriage license.

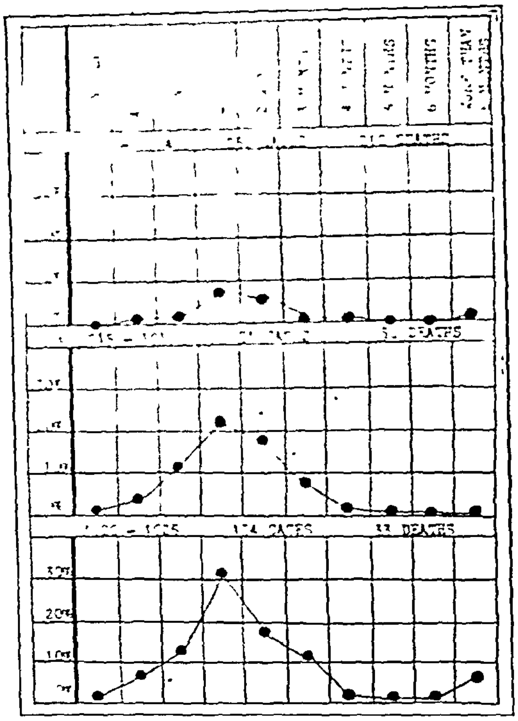

Fig 3 —Expectation of life in relation to age at beginning of treatment of syphilis

CONCLUSIONS

1. The fetal and infantile mortality and morbidity from congenital syphilis should make it a subject of importance in our work.

2. The Wassermann reaction, the development of arsenical therapy, the specially organized clinic and the social service have combined to effect a satisfactory reduction in mortality and morbidity, provided treatment is instituted during the critical period of from 5 weeks to 2 months.

3. The foregoing factors have had very little effect on cases appearing for treatment much before or much after this period.

4. More effective treatment for the very early case must be developed, or its prevention must be obtained through treatment of pregnant mothers.

5. Sulpharsphenamine, intramuscularly, appears to be nearly as effective as neo-arsphenamine, intravenously, in causing disappearance of lesions and serologic reversals in early cases. It appears to be as effective in causing the lesions to disappear in late cases and more effective in reversing the serum.

6. It is possible that a definite reduction in the incidence of congenital syphilis may be brought about through educational and legal measures.

25 Bay State Road.

THE COLLATERAL CIRCULATION IN THROMBO-ANGIITIS OBLITERANS

AN INDICATION FOR LIGATION OF THE FEMORAL ARTERY JUST DISTAL TO THE PROFUNDA

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AND
F. L. REICHERT, M.D.
BALTIMORE

Roentgenograms of the vessels of the extremities injected with bismuth oxychloride after amputation indicate that the changes in the vessels leading to gangrene vary considerably. The differences in the collateral circulation indicate that different procedures may be employed to advantage in the treatment of some of these lesions, especially of thrombo-angiitis obliterans.

Meleney and Miller,[1] in 1924, injected the vessels of the legs of Chinese, which had been amputated because of gangrene following a vascular lesion in every way similar to thrombo-angiitis obliterans observed in this country. Reichert, two years before this publication, had noted similar changes. His results were, however, not published. A roentgenogram of the injected vessels indicates the loss of the normal arrangement of the blood vessels, and in the main vessels patchy defects, indicating almost complete obliteration of the lumen of the vessel at some points. The most striking observation in these cases, which seems to be constant, is the establishment of an extensive collateral circulation, in which apparently the smaller vessels are principally concerned. In stereoscopic plates, numerous small arterioles may be seen which extend even to the line of gangrene. These vessels are visualized by injecting Hill's mass[2] of bismuth oxychloride into the popliteal artery under a pressure of about 200 mm. of mercury.

REPORT OF CASES

The following is the history of a patient, the roentgen-ray appearance of whose foot and leg is shown in figure 3 after the vessels were visualized by the injection mass mentioned above:

Case 1.—J. G., a Russian Jew, aged 45, admitted to Johns Hopkins Hospital, June 18, 1922, and discharged improved, July 6, smoked ten cigarets a day. He had been an active athlete, having boxed, run and wrestled. He served in the Russian army, but developed scurvy. In 1912, the little toe of the right foot became gangrenous. This was amputated in the Johns Hopkins Hospital Dispensary. The foot was supposed to have been badly frostbitten. In 1915, the great toe on the right foot was amputated for gangrene, and in 1916, the remaining toes of the right foot were removed for the same lesion. The blood pressure was: systolic, 120; diastolic, 70. The radial pulses were of equal volume, but small. The vessels were just palpable; the brachial pulses could not be felt. The left dorsalis pedis was just palpable. No pulsation could be felt in the right dorsalis pedis or in the right posterior tibial artery. At the time of admission, the left leg was normal in appearance. On the right side, the first and second toes were gangrenous. In 1917, the fourth left toe became discolored and painful, dry gangrene developing. This toe was amputated at the Hebrew Hospital. At the same time the right leg was amputated above the knee, because of gangrene of the right foot. In the Hebrew Hospital, the left third toe was removed. A small ulcer remained at the base of the second toe. In June, 1921, the left foot became slightly discolored. After rubbing and massage, the color became more normal and remained so until five weeks before admission to Johns Hopkins Hospital. When admitted, the big toe was purplish. The pain had become very severe.

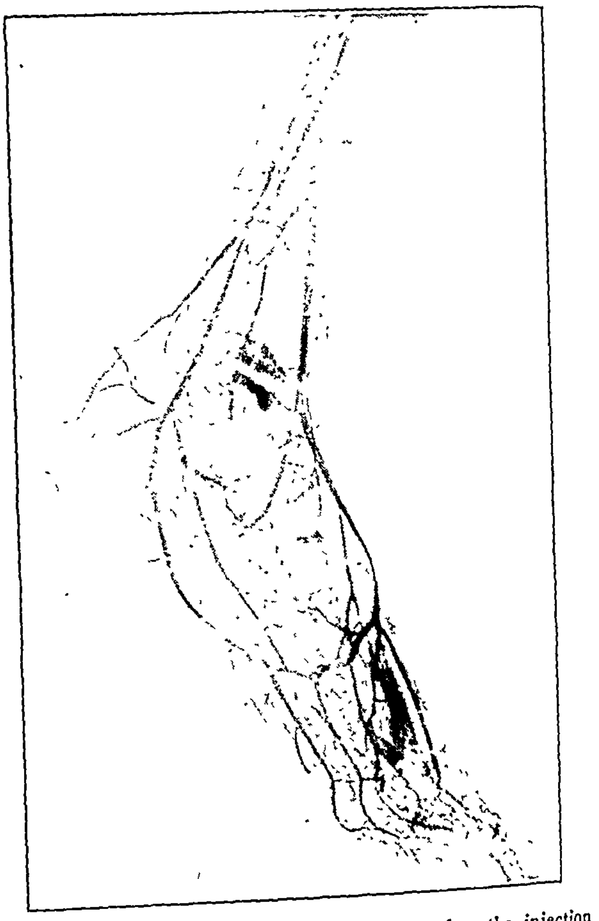

Fig. 1.—Normal arterial tree of leg and foot after the injection into the popliteal artery of bismuth oxychloride.

Examination on admission revealed discoloration of the left foot just above the ankle—purplish on foot, pink at ankle—toes dead, dry, black. Amputation was done, June 20, 1922, through the lower third of the left thigh.

June 29, nine days after operation, the thumb on the right hand became quite painful, and the right radial pulse was no longer palpable.

Abundant collateral circulation is seen in the visualized artery of the left leg and foot. No statement is made regarding the presence of a thrombus of the popliteal artery in this case.

In the following case, the effect of thrombosis of the popliteal artery on gangrene is seen:

Case 2.—L. B., a man, aged 50, admitted to the Hebrew Hospital, March 8, 1926, in charge of Dr. Bernheim, had been a heavy smoker, using from fifteen to twenty cigarets a day. His left leg was amputated above the knee six years ago for thrombo-angiitis obliterans. Two years ago, i

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[1] Meleney, F. L., and Miller, G. G.: A Contribution to the Study of Thrombo-Angiitis Obliterans, Ann. Surg. **71**:976 (May) 1925.

[2] Suspension of 17 per cent bismuth oxychloride in 10 per cent acacia (Hill, E. C.: Notes on an Opaque X-Ray Mass, Bull. Johns Hopkins Hosp. **35**:218 [July] 1924).

February, 1924, the outer side of the right great toe, as well as the little toe, became ulcerated. He was admitted to the Hebrew Hospital, and a periarterial sympathectomy was performed for the relief of a severe pain in the toes. For a year he was relieved; then the pain returned. March 15, 1926, Dr. Bernheim amputated the right thigh above the knee for thrombo-angiitis obliterans.

When the amputated leg was examined, a recent thrombus was found in the popliteal artery. A clot was also found in the vein. These were removed. The leg was injected with Hill's bismuth oxychloride mass, and stereoscopic roentgenograms were taken. From 100 to 120 cc. of this mass was required to fill the vessels, while in an arteriosclerotic case only 30 to 40 cc. is needed. There were numerous collateral vessels throughout the calf, ankle and foot. The main arterial trunks, the plantar arch, and the normal metatarsal arteries were not seen.

Case 3.—L. G., a Russian Jew, aged 67, admitted to the medical service of Johns Hopkins Hospital, April 6, 1926, and transferred to the surgical service, April 10, had been a baker most of his life, coming to America five years before admission. He smoked from ten to fifteen cigarets a day, and drank tea and coffee moderately. He had had no trouble with his extremities until seven weeks before, when he noticed a feeling of coldness in his right foot. Later, severe pain was noted. This had not been continuous, but came at intervals of four or five minutes and lasted for about the same length of time. It persisted throughout the day, and was particularly severe at night. It had been so severe and repeated so often that sleep had been greatly interfered with. There had been some pain and tenderness in the right calf and leg, but the main tenderness was in the right heel. He walked on the ball of the foot, the heel was so painful. An ulcer had developed on the right heel during the past five days.

The blood pressure was: systolic, 195; diastolic, 90. Both feet were cool, but the right foot and leg were cooler than the left. There was a bluish-red discoloration of the right foot, which was accentuated when the foot hung down. The same discoloration of the left foot was noted. There were varicose veins of both legs, most marked on the right. These were tortuous. Some were thrombosed.

The pain had been so severe that bromides and paraldehyde had been required. The patient had disturbed the ward at night because of the pain.

The femoral artery was evidently occluded by a thrombus, for it could be felt as a cord in Scarpa's triangle.

April 10, the femoral artery was exposed just distal to the profunda femoris. The artery was ligated, two ligatures being placed about an inch apart, and the intermediate segment removed. A recent clot was found in the lumen of the artery. The intima of the artery seemed fairly normal. The femoral vein was palpated but not exposed. It appeared to be free of a thrombus. The wall of the artery was injected and adherent to the perivascular sheath.

No signs of gangrene followed ligation of the artery, and the pain subsided.

The development of the extensive collateral circulation involving particularly the smaller vessels is distinctive of thrombo-angiitis obliterans. The slow progress of the disease involving primarily the distal vessels permits of the development of this rather extensive collateral circulation. In the second case, we believe that we are justified in thinking that the gangrene was dependent on the extension of the process to the popliteal artery, leading to thrombus formation, for the clot that was removed from the popliteal artery seemed to be recent. In the third case, giving a history of seven weeks without any evidence of gangrene, except the small erosion on the heel, the thrombus was of recent origin. Thrombus formation in the femoral artery, occurring at the favorable site for collateral circulation to develop, may account for the absence of gangrene. The site of the thrombus undoubtedly accounts for variations in the clinical courses in these cases. In the ascending form, thrombus formation extending to the popliteal artery would probably lead to gangrene. In a descending form, the thrombus first occurring in the femoral artery below the origin of the profunda femoris would hasten the development of a collateral circulation, which might be sufficient to maintain the nutrition of the toes and feet, even if the popliteal artery later became occluded.

Being associated with the development of such a marked collateral circulation, the problem in thrombo-angiitis obliterans would seem to be to employ some procedure which would force or stimulate the development of such an extensive collateral circulation that this would keep ahead of the extension of the disease process to the popliteal artery. We believe that ligation of the femoral artery just below the profunda is indicated, for in this way the development of this collateral circulation would be favored. If such a collateral circulation developed, the extension of the process to the popliteal artery would interfere little, if at all, with the circulation already developed in the lower part of the foot.

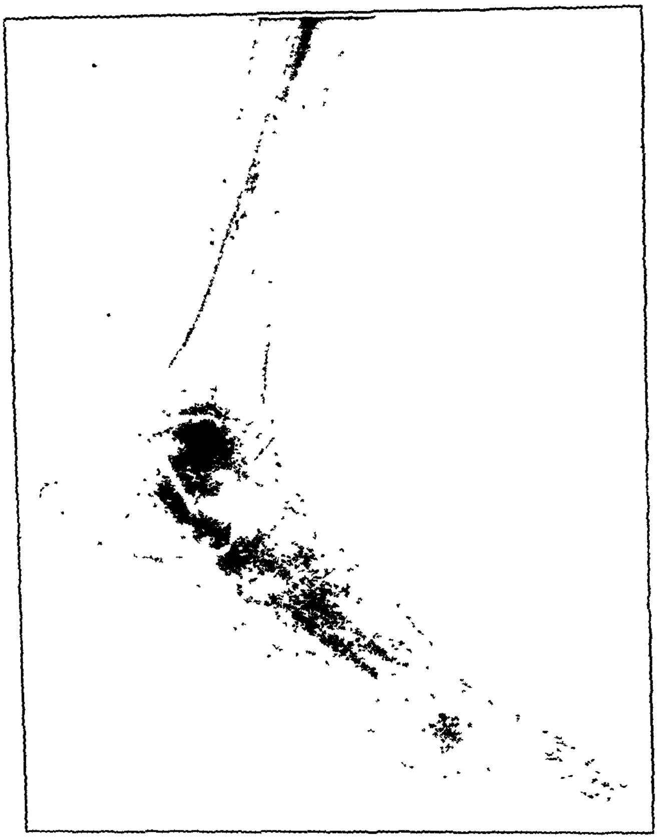

Fig. 2.—Arterial tree of leg and foot after injection of the popliteal artery with bismuth oxychloride; arteriosclerotic gangrene.

Meleney and Miller have recognized the importance of the collateral circulation. They say that, if the disease continues instead of subsiding or coming to a standstill, a contest develops between two forces, blockage of the vessels on the one hand and collateral blood vessel development on the other. There is a limit to the speed with which collateral circulation can develop. At present one can only guess what it is that limits the speed of the disease process; but the outcome is determined by the relative speed of the two processes. After an equilibrium has been established following the first attack, if a second attack comes on or a dormant process becomes active again, the contest is renewed, the margin of safety is narrower, the potential capacity of a collateral circulation is less, and gangrene is more likely to develop than during the first attack.

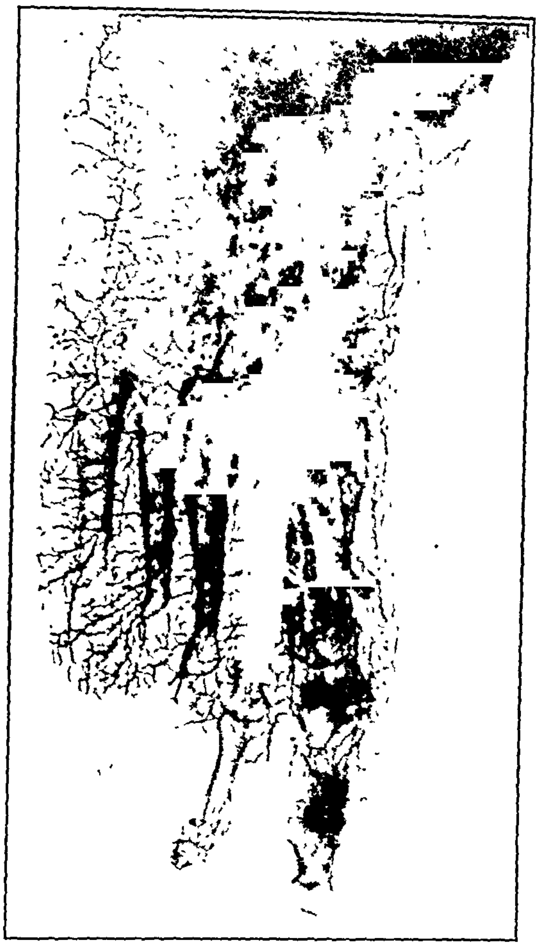

Fig. 3 (case 1).—Collateral circulation in the foot seen after injection of the popliteal artery in a case of thrombo-angiitis obliterans.

That the disease process does not interfere with the development of a collateral circulation is indicated by visualization of the vessels that require much more injection mass than in the cases of arteriosclerotic gangrene. The blood pressure is evidently sufficient in these cases to aid in the development of a collateral circulation.

The cause of the pain in these cases has been variously interpreted. Meleney and Miller found in almost one half of their cases occlusion of the nutrient arteries in the large nerves. Mural thrombi were found in some of these cases. In every case in which the vessels to the nerves were occluded there was severe pain, enough to keep the patient awake at night. Pain apparently of equal severity was sometimes present when no occlusion was found. No degeneration of the nerves was found. Clinically, paralysis and anesthesia are rarely noted in these cases. Buerger gives as a possible explanation of the pain a general fibrosis around the entire vessel nerve cord.

There are certain clinical features about the pain, especially that observed in the early cases of thrombo-angiitis obliterans, which suggest arterial spasm. Pain coming on after exertion and disappearing after rest certainly is suggestive of spasm and may be quite comparable to that associated with angina pectoris. The apparently complete relief of pain following ligation of the femoral artery is quite suggestive. Rest in bed cannot be regarded as the sole cause of relief of pain in the case in which the artery was ligated, for the patient had been in bed, without relief, for some days preceding the ligation. The ligation throws out of function an artery that is inflamed and would prevent the canalization of thrombi, the lumen eventually becoming completely occluded. Spasm could not involve simultaneously all the vessels entering into the collateral circulation.

Roentgenograms of vessels in thrombo-angiitis obliterans injected with bismuth oxychloride reveal an extensive collateral circulation, and indicate that gangrene in these cases is due to the inability of the collateral circulation to keep ahead of the advancing thrombus. An attempt may be made to hasten the development of a collateral circulation by division of the femoral artery just distal to the origin of the profunda femoris. Division of this artery throws out of function the principal arteries involved in the chronic inflammatory process. That thrombo-angiitis obliterans does not interfere with the development of a collateral circulation is indicated by visualization of vessels in these cases.[3]

The early and practically complete relief from pain following division of the femoral artery (as in case 3) suggests that spasm of the artery may be an important factor in causing pain, and that throwing out of function of the arteries principally involved in this process may be an important factor in relief of pain.

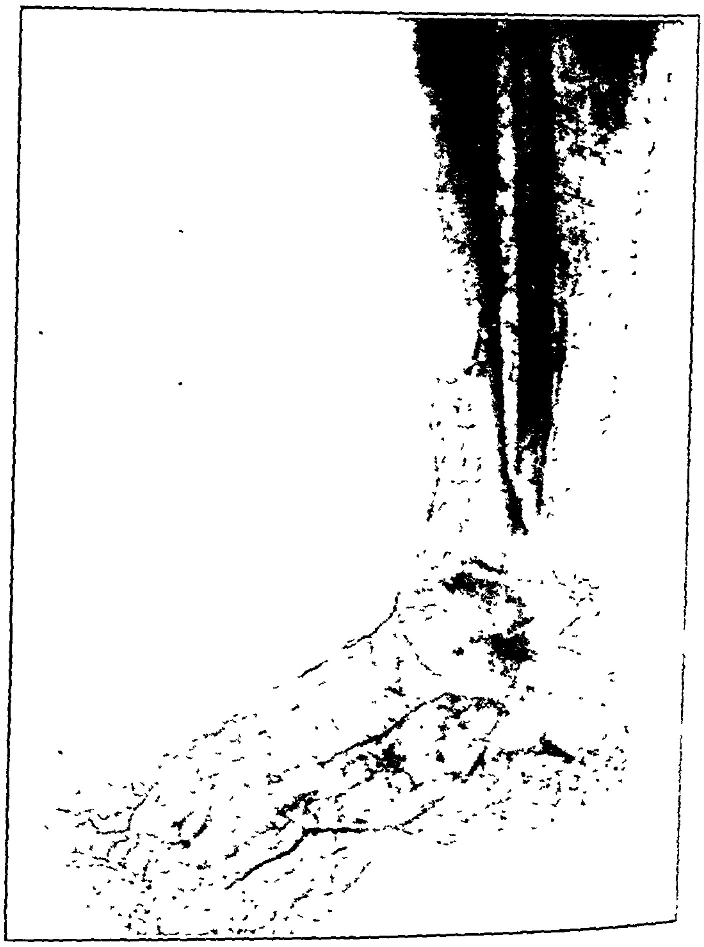

Fig. 4 (case 2).—Collateral circulation in leg and foot in a case of thrombo-angiitis obliterans: Gangrene of the toes occurred; a recent thrombus was found in the popliteal artery; this had to be removed before the injection was made: it seems probable that the gangrene was coincident with the extension of the thrombus into the popliteal artery.

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[3] The patient in whom the artery was ligated and divided has been recently examined. While he has some pain, it is not so severe, the foot looks better, and the small gangrenous area on the heel has improved.

POSTENCEPHALITIC OBESITY

REPORT OF CASES *

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Recently there have come under my observation four cases in which a rapid increase in weight was associated with the neurologic evidence of epidemic encephalitis. In these and in several similar cases reported in the foreign literature, the history of encephalitis was so closely related chronologically to the onset of the metabolic disturbance as clinically to indicate an etiologic relationship.

In view of the ease with which such cases may be confused with simple endocrinopathies, and since two of the four cases were referred for study as presenting hypopituitarism, it may be appropriate to direct attention to postencephalitic obesity as a clinical entity, and to refer to experimental and pathologic data indicative of its neurogenic basis, so that a more general recognition and study of the condition may lead, not only to its clearer differentiation from endocrinous obesity but also, in some cases, to the retrospective diagnosis of mild, abortive types of the underlying encephalitis.

A rapid increase in weight has not been uncommon among the sequelae or chronic manifestations of this disease.[1] Among eighty-nine cases of encephalitis reported by Grossman,[2] fifteen, or about 17 per cent, showed a weight increase, varying from 15 to 95 pounds (6.8 to 43 Kg.). In 8 per cent of Duncan's[3] eighty-three encephalitic patients the increase in weight was so marked that the patients complained of it. Other cases of postencephalitic obesity have been reported by Stiefler,[4] Livet,[5] Nobécourt,[6] Roger and Aymès,[7] Barkman,[8] Nonne,[9] Sartorelli,[10] Rouquier and Lacombe,[11] Rivet, Rouquès and Jany,[12] Wimmer,[13] and Hall.[14]

The rapidity of the weight increase and the preceding encephalitis were the outstanding clinical features of these cases. Usually the adiposity is of general distribution (fig. 1), although it may be of the so-called "pituitary type," involving chiefly the girdle region and the proximal portions of the extremities. Among other symptoms which, in the absence of pituitary neoplasm, are suggestive of postencephalitic obesity are somnolence, narcolepsy, psychic changes, a labile temperature with occasional febrile periods, rapid fluctuations in weight, with normal or elevated basal metabolism, and the association of neurologic manifestations. These symptoms warrant investigation into the history of the case for evidence of a mild underlying encephalitis.

REPORT OF CASES

Case 1.—M. N., a girl, aged 16, was referred for study as having "hypopituitarism." She complained of nervousness and obesity of four years' duration. With the exception of frequent attacks of tonsillitis and an attack of influenza at the age of 10, she was in good health until four years previously, when she experienced a "nervous breakdown." She recalls going home from school one day very weak, sleepy and feverish, with a severe headache and backache. She remained in bed for ten weeks, and slept almost the entire time, except the last two weeks. She could be aroused easily for her meals, but, as soon as she was left alone, she went to sleep again.

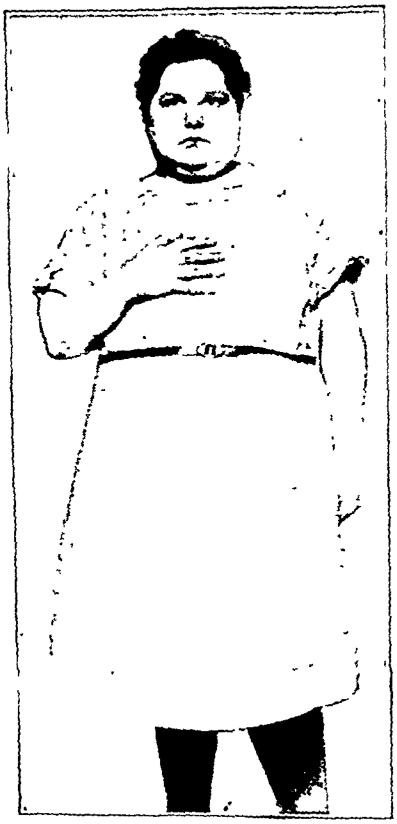

Fig 1 (case 3).—Extreme postencephalitic obesity.

After this illness she felt perfectly well and went back to school for more than a month. A bilateral blepharospasm and an intention tremor of the hands then developed. At the same time a definite increase in weight began. Before her illness she weighed about 100 pounds (45 Kg.). During the following year she rapidly gained 40 pounds (18 Kg.), and, in the subsequent two years, she more gradually attained a weight of 166 pounds (75 Kg.). There was no obesity in the family. The obesity was generalized, but more marked about the girdle region and the proximal portions of the extremities. The bony structure was properly proportioned. The gait was normal, although the posture was slightly stooped. The skin and hair were normal. The pulse was 108; the temperature 98.2, and respirations, 20. The height was 63 inches (160 cm.) and the weight, 166 pounds, was about 40 per cent above normal. The facial expression was dull and set. Asymmetry was apparent on smiling, the left side being more active. This asymmetry was not present on voluntary contraction of the facial muscles. There was an inconstant bilateral blepharospasm. The left palpebral fissure was smaller than the right. The external ocular movements were normal, and there was no nystagmus. The pupils were equal and regular. They reacted in accommodation, but did not react to light. The thyroid was slightly enlarged. There were no demonstrable abnormalities of the heart, lungs, abdomen or genitalia. There was a constant, coarse, rhythmic tremor of the hands, greatly increased on attempting fine movements. The tendon reflexes were exaggerated. The Babinski reflex and the Romberg sign were negative. There were no sensory changes.

Ophthalmoscopic examination revealed a normal fundus. The intelligence quotient was 96 per cent, but there was a marked emotional instability. The blood and urine were normal; the twenty-four hour output was 900 cc. The blood pressure was 100 mm. systolic and 80 mm. diastolic. The

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* Read before the Chicago Neurological Society, Dec. 17, 1925.

* From the Department of Medicine, Rush Medical College, Chicago.

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blood Wassermann reaction was negative. The basal metabolism was normal. Roentgenograms of the sella showed no enlargement. The epiphyseal development corresponded to the chronological age.

The subsequent course was of interest particularly in the development, more than four years after the acute encephalitic manifestations, of attacks of forced conjugate upward movements of the eyes, as recently described by Hohman[15] and by Benton.[16]

Case 2.—M. N., a woman, aged 22, experienced at the age of 17 a left facial paralysis, associated with drowsiness and headache, and recurring periods of unconsciousness. There were no other symptoms of significance except a rapid increase in weight. Before this illness her weight had been 120 pounds (54 Kg.). Within six months she gained 30 pounds (14 Kg.). At the time of examination she weighed 174 pounds (79 Kg.), which was 30 per cent above the average for her age and height, 65 inches (165 cm.).

In addition to the adiposity, examination revealed a left facial paresis, exaggeration of the left patellar and Achilles reflexes, adiadokokinesis, and cogwheel resistance on movements of the left arm. The eyegrounds, basal metabolism, roentgenograms of the sella turcica, blood Wassermann and spinal fluid were negative.

Case 3.—B. O., a girl, aged 15, had been very slender until three years previously. She then rapidly gained in weight. Her mother stated that there had been no antecedent illness "except an inability to move the left side of her face for a few weeks." She had since become very dull and sluggish, and would not associate with other children. There were no other significant symptoms.

Examination revealed a generalized obesity; height, 58 inches (140 cm.); weight, 154 pounds (70 Kg.), about 70 per cent above normal. There was a left facial paresis; a constant coarse tremor of the hands, and exaggerated tendon reflexes. Roentgenograms of the sella were normal. Ophthalmoscopic examination revealed normal fundi. The blood Wassermann reaction was negative. Basal metabolism was 12 per cent minus. Blood sugar determinations after ingestion of 122 Gm. of glucose were: zero hour (fasting), 0.105 per cent; one-half hour, 0.130 per cent; one hour, 0.109 per cent; two hours, 0.106 per cent.

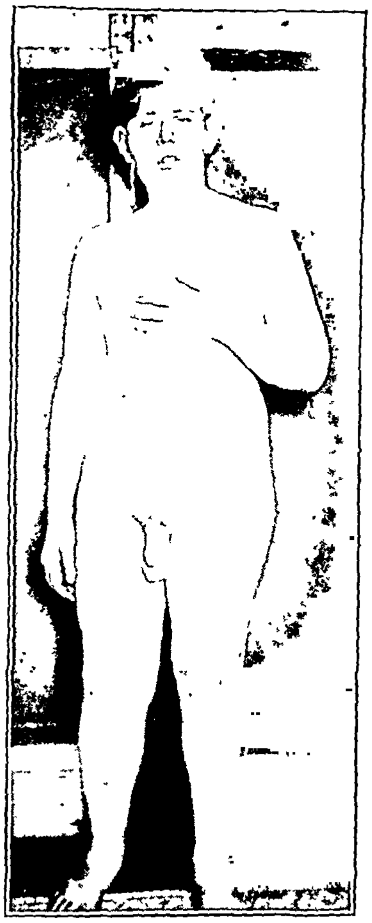

Fig. 2 (case 4).—Postencephalitic obesity.

Case 4.—A. B., a boy, aged 16, in the service of Dr. Isadore Pilot at the Cook County Hospital, was apparently normal until, at the age of 13, he developed an extreme drowsiness. During several months he would suddenly fall asleep, and often while eating he would drop his food and even strike his head against the table. Subsequently he was unable to advance in school, although previously he had attained the sixth grade. He became disinterested, untidy and incorrigible. He was brought before the juvenile court because he frequently remained out all night and slept most of the day. There were no other symptoms. His general condition improved during the past year.

With the period of lethargy a rapid increase in weight began, 50 pounds (23 Kg.) being gained the first year. His height was 66 inches (165 cm.), and his weight 190 pounds (87 Kg.), about 50 per cent above the normal. The adiposity was general. The expression was dull and sleepy. There was a slight irregularity of the left pupil, and the patellar reflexes were exaggerated. The genitalia were well developed. The visual fields, sella turcica, blood and spinal fluid were normal. The basal metabolism was 10 per cent minus. The intelligence quotient was 102. Blood sugar determinations after ingestion of 100 Gm. of glucose were: zero hour, 0.094 per cent; one hour, 0.125 per cent; two hours, 0.111 per cent; three hours, 0.075 per cent.

COMMENT

In these cases a rapid increase in weight followed the acute encephalitic manifestations. That there was an actual etiologic relationship is indicated, not only by reports of similar cases, but also by the experimental development of obesity in dogs after the production of midbrain lesions at the site of predominance of the typical pathologic changes of epidemic encephalitis.

Aschner's[17] experiments on the pituitary gland and the adjacent region, in 1912, led him to conclude that extrapituitary nervous lesions alone may cause some cases of experimental obesity in dogs. Later, Camus and Roussy[18] produced typical adiposogenital dystrophy in dogs by puncture of the optopeduncular area of the midbrain without injury to the hypophysis. These results have more recently been confirmed by Bailey and Bremer,[19] who variously traumatized the midbrain with resultant diabetes and obesity, and demonstrated, at postmortem, the scar of the midbrain lesion and the integrity of the pituitary gland. Although these investigators were interested chiefly in diabetes insipidus, they concluded that lesions of the midbrain in the immediate region of the pituitary stalk, but without injury to the gland itself, caused not only diabetes insipidus, but also rapidly developing obesity.

Since the typical pathologic changes in epidemic encephalitis involve the area of the midbrain that was attacked by these investigators, the rapidly developing obesity of encephalitis appears to be the clinical counterpart of the experimental obesity produced by experimental lesions of the midbrain.

That postencephalitic obesity is on a neurogenic rather than an endocrine basis is, furthermore, in accord with the lack of significant pituitary pathologic change demonstrable on postmortem examination in cases of epidemic encephalitis. Marinesco,[20] Marie and Trétiakoff,[21] Howe,[22] Levy, Economo, and others,[23] agree that the postmortem evidence of organic pituitary injury in epidemic encephalitis is negligible.

That the hypophysis may be functionally impaired, secondary to a lesion of a controlling midbrain center, or that the integrity of this center or tract is necessary in order that a pituitary secretion may properly exert its influence, remain as possibilities. In either event, the pituitary body appears not to be the primary factor in the disturbance, if, indeed, it be a factor at all.

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[15] Hohman, L. B.: Forced Conjugate Upward Movements of the Eyes (Postencephalitic), J. A. M. A. **84:** 1489 (May 16) 1925.

[16] Benton, G. H.: Postencephalitic Syndrome, Potent Conjugate Upward Movements of the Eyes with Temporary Fixation, J. Florida M. A. **12:** 12 (July) 1925.

[17] Aschner, B.: The Function of the Hypophysis, Arch. f. d. ges. Physiol. **146:** 122, 1912.

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[19] Bailey, P., and Bremer, F.: Experimental Diabetes Insipidus, Arch. Int. Med. **28:** 773 (Dec.) 1921.

[20] Marinesco, M. G.: A Case of Progressive Postencephalitic Parkinsonism with Histologic Examination of the Nervous System, Rev. neurol. **38:** 1012, 1922.

[21] Marie, P., and Trétiakoff, C.: Condition of the Hypophysis in Lethargic Encephalitis, Bull. et mém. Soc. méd. d. hôp. de Paris **44:** 357 (March 12) 1920.

[22] Howe, H. S.: Acute Epidemic Encephalitis; Association for Research in Nervous and Mental Diseases, New York, Paul B. Hoeber, p. 185.

[23] Quoted by Wimmer (footnote 13, p. 291).

Clinically, the resemblance between some cases of postencephalitic obesity and cases that have been described as examples of hypopituitarism is sufficiently close to lead to confusion in differential diagnosis. Among others, Cushing,[24] Engelbach,[25] Falta,[26] and Lisser [27] have reported cases that are characterized by the sudden development of obesity associated with various neurologic symptoms. Headache, dizziness and somnolence, paralysis and epileptiform seizures, and visual disturbances, including diplopia, are among the acute nervous symptoms. Falta [28] records, as an example of hypophysial dystrophy, a case of rapidly developing obesity associated with impotence, severe headache, vomiting, tremor of the hands, and diplopia, although the sella was normal. Case 12 of Lisser's series, showing hypopituitarism, presented an acute onset with paresis of the lower extremities, drowsiness, headache, and rapid increase in weight. Engelbach [29] also refers to the association of inversion of the sleep rhythm, extreme nervous instability, paroxysmal dyspnea and syncopal attacks with some of his cases of obesity.

These symptoms are now recognized as being typical manifestations of the acute and chronic forms of epidemic encephalitis. Since the obesity that follows encephalitis may resemble the type attributed to the pituitary gland, cases of rapidly developing obesity require careful analysis of the onset of the metabolic disturbance, lest a mild encephalitis be misinterpreted as a "simple endocrinopathy." In postencephalitic obesity, as well as in parkinsonism, the initial acute manifestations may be so mild that only by specific investigation can the encephalitic basis of such cases be determined in retrospect.

SUMMARY

1. Clinically, epidemic encephalitis is followed by rapidly developing obesity in a sufficient number of cases to indicate a causal relationship.
2. Experimentally, there is evidence confirmatory of this clinical observation in the production of adiposity in dogs by a localized traumatic encephalitis of the midbrain, which is the site of election of the typical pathologic changes of epidemic encephalitis.
3. In cases of rapidly developing obesity, the anamnesis should be carefully studied to determine a possible encephalitic basis before the obesity is attributed to a simple functional endocrinopathy.

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[24] Cushing, Harvey: The Pituitary Body and Its Disorders, Philadelphia, J. [illegible] 912, case XXXV.

[25] [illegible] lers of the Pituitary Gland, in Tice's Practic[illegible], Md., W. F. Prior Company, 8, 1922, cases 14, 15 and 23.

[26] Falta, W.: Endocrine Diseases, Philadelphia, P. Blakiston's Son & Co., 1923, cases XXXV, XXXVII and XLI.

[27] Lisser, H.: Absence of the Prostate with Endocrine Diseases, Notably Hypopituitarism, 7: 225, 1923, cases 11 and 12.

[28] Footnote 26, case XXXV.

[29] Footnote 25, p. 538.

Psychanalysis.—What is in dispute is Freud's insistence that psychanalysis must be carried back to the patient's early memories of from 2 to 5 years of age. This, Freud maintains, is essential for true psychanalysis. It is essential because of Freud's peculiar views concerning sexual development and the relation of sexual activity to the psychoneuroses. But we must recognize at the outset that other psychotherapists claim equal success in their treatment without extending their analysis so far backward, and that they are wholly unable to accept Freud's views as to the invariable responsibility of infantile sexual conflicts and sexual maldevelopments for the psychoneuroses.—Myers, C. S., *Lancet* 1:1181 (June 19) 1926.

INFLUENCE OF THE SACROTUBEROUS AND SACROSPINOUS LIGAMENTS

IN LIMITING MOVEMENTS AT THE SACRO-ILIAC JOINT *

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AND
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ST. LOUIS

The sacro-iliac joint is now generally regarded as a diarthrosis. The articular surfaces of the sacrum and ilium are covered with thin layers of cartilage, separated by a joint cavity, a narrow cleft, and held together by ligaments collectively forming a capsule very thick posteriorly. Only slight gliding movements are permitted. According to the common teaching, the weight of the trunk, transmitted in large part to the base of the sacrum, causes the latter to tend to rotate on a transverse axis, and because of the oblique position of the sacrum the promontory would tend to move downward and forward and the inferior part of the sacrum to move upward and backward. The sacrotuberous, sacrospinous and posterior sacro-iliac ligaments function in limiting this rotary movement of the sacrum on the iliac bones.

This is the picture of the sacro-iliac articulation given in the textbooks of Quain, von Bardeleben, Poirer and Charpy. The mechanical conceptions are traceable chiefly to von Meyer,[1] who described the rotary movement of the sacrum, determined the position of the axis of rotation, and showed the tendency for the promontory to sink under the pressure of the body weight, and of the restraint put on this rotation by the sacrotuberous and sacrospinous ligaments. The movement of rotation was not studied experimentally by von Meyer. In 1889, Walcher [2] drew attention to the changes in the pelvic conjugates resulting from different positions of the body in women in labor. Exact analysis of the changes was undertaken in 1891 by Gustav Klein,[3] who studied experimentally the effects on the diameters of the pelvis caused by movements of the sacrum at the sacro-iliac joint. Klein located the transverse axis of rotation at a level posterior to the body of the second sacral vertebra and demonstrated slight alterations in the conjugate by raising and lowering the pubis of a pelvis, the sacrum of which was fixed in a vice. In these experiments, all ligaments were retained. Observations on the function of the sacrotuberous and sacropsinous ligaments were not included in the study.

Apparently our conception of the functions of the sacrotuberous and spinous ligaments has been to a considerable extent inferred from the fact of a movable sacro-iliac joint and the points of attachment of these ligaments. In view especially of the surgical interest in the sacro-iliac joint, it seems desirable to collect data on the factors that restrain rotary movement of the sacrum. This paper gives the results of a test made in order to determine the effect of the sacrotuberous and sacrospinous ligaments in limiting such movement.

The material used for the experiment was derived from the dissecting room and consisted of a series of specimens prepared from cadavers of known race, sex and age. The series included three females, of 35, 56 and 68 years of age, and twenty-seven males ranging in age between 20 and 83 years. There were twenty-three whites and seven negroes, as may be seen in the accompanying table. Specimens were prepared of the pelvis, lumbar spine and the last three bones of the thoracic spine by the removal of the soft parts, excepting the ligaments, which were carefully preserved intact. The resulting preparation was in one piece, flexible and clean for observation. Precautions were taken to prevent drying, and no specimen was used that had become dry. The cadavers from which the specimens were made had been preserved with a mixture of phenol (carbolic acid), alcohol and glycerin injected in the usual way into the arteries. As a control, a fresh specimen from an unembalmed body was made and subjected to the same tests as were the specimens in the series. On the completion of the experiment, the specimens were skeletonized and carefully inspected for evidence of ankylosis. Cases of ankylosis were taken out of the series.

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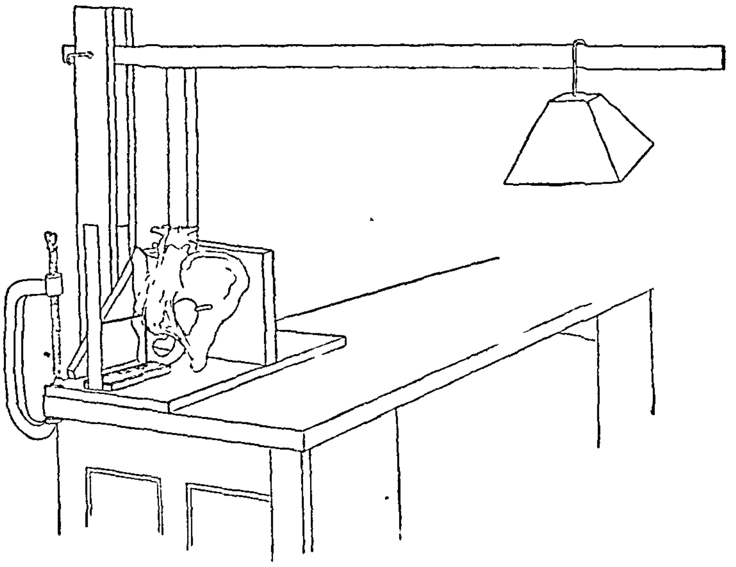
* From the Department of Anatomy, Washington University School of Medicine.

[1] Von Meyer, G. H.: Arch. f. Anat. u. Physiol., 1853-1869; Statik und Mechanik des menschlichen Knochengerüstes, Leipzig, 1873; Lehrbuch der Anatomie des Menschen, 1873; Arch. f. Anat. u. Entwcklngsgeschichte, 1878 (the important paper dealing with rotation of the sacrum).

[2] Walcher: Centralbl. f. Gynäk., 1889.

[3] Klein, Gustav: Ztschr. f. Geburtsh. u. Gynäk., 1891.

An apparatus consisting of a wooden platform and an upright was constructed. When in use it was clamped to a table and so maintained immovable. The pelvis was posed in the normal standing position and securely bolted to the upright. A lever placed above and carrying a sliding weight gave any desired pressure in the downward direction on the sacrum through the superimposed vertebral column. In order to demonstrate the presence or absence of movement of the lower end of the sacrum, an indicator consisting of a piece of straight steel wire was fixed to the lower part of the sacrum in the middle line and made to extend below the last segment of the sacrum. Beneath the point of the indicator, a millimeter scale was set. A second indicator projected horizontally backward from the lower segment of the sacrum, and with a vertically placed scale showed a small degree of downward displacement of the sacrum when under pressure. The indicators gave a definite demonstration of the presence and direction of movement of the inferior segments of the sacrum when the base of the sacrum was subjected to downward pressure.



Apparatus with specimen in place.

The accompanying illustration shows the apparatus with the specimen in place; the ischia rest on the platform, and the anterior-superior spines and symphysis pubis are in contact with the upright. The pelvis is held securely in place by means of two bolts, which hook around the iliac notches. The bolts pass through the upright in front and by means of thumb screws hold the pelvis immovable.

With the specimen in position, a force of 75 Kg. was applied by means of the lever and weight to the vertebral column, this amount being constant for all the specimens. Before the force was applied the readings of the indicators were taken to ascertain whether movement had taken place before the ligaments were severed. The force having been applied and allowed to act for fifteen minutes, a second reading was taken. It was found that no movement took place prior to cutting the ligaments. The sacrospinous and sacrotuberous ligaments were then severed on both sides, and the positions of the indicators were immediately noted. The force was continued for one-half hour longer, and the position of the indicator was again observed.

Results of Experiment

				Backward Excursion of Indicator in Millimeters with Promontory under Pressure of 75 Kg.			
					Ligaments Severed		
Number	Age	Sex and Race*		Ligaments Intact	At the Time	½ Hour Later	Total Excursion
1	74	♂	W	0	1.0	1.5	1.5
2	49	♂	W	0	1.0	1.5	1.5
3	50-60	♂	W	0	1.0	1.5	1.5
4	40-50	♂	W	0	0.5	1.0	1.0
5	38	♂	W	0	1.0	2.0	2.0
6	74	♂	W	0	0.5	0.5	0.5
7	60	♂	W	0	0.5	1.0	1.0
8	62	♂	W	0	0.5	1.0	1.0
9	83	♂	W	0	2.0	2.0	2.0
10	41	♂	W	0	1.5	2.0	2.0
11	55	♂	W	0	1.0	1.5	1.5
12	55	♂	W	0	0.5	1.0	1.0
13	57	♂	W	0	0	0	0
14	45	♂	W	0	1.0	1.5	1.5
15	55	♂	W	0	0	0	0
16	35	♂	W	0	0	0.5	0.5
17	67	♂	W	0	0.5	1.0	1.0
18	73	♂	W	0	0.5	1.0	1.0
19	45	♂	W	0	0.5	0.5	0.5
20	75	♂	W	0	0.5	1.5	1.5
21	68	♀	W	0	1.0	1.5	1.5
22	56	♀	W	0	0.5	0.5	0.5
23	42	♂	B	0	1.5	2.5	2.5
24	52	♂	B	0	1.0	1.0	1.0
25	60-70	♂	B	0	1.0	1.5	1.5
26	24	♂	B	0	0.5	1.0	1.0
27	35	♀	B	0	0	0	0
28	20	♂	B	0	0	0	0
29	21	♂	B	0	1.0	1.0	1.0
30	50-60	♂	W	0	1.5	1.5	1.5

* W, white; B, black; ♂, male; ♀, female.

The table presents the results obtained by this experiment.

RESULTS OBTAINED

The experiment has shown that in 86 + per cent of the pelves tested, the sacrum was movable. The degree of mobility at the sacro-iliac joint is lower than that obtained in the experiments of Klein and found in the study of Brooke.[4] Under a pressure of 75 Kg. no movement was observed before the ligaments were cut, and only slight movement was recorded after cutting. This relatively lessened mobility is probably partly the result of some fixation of the ligaments by the injection fluid; but that this factor is not the only one is witnessed by the laxity of ligaments generally throughout the body. That male specimens composed 90 per cent of the series may affect the question.

A study of the table shows that backward movement of the lower part of the sacrum on the iliac bones takes place under downward pressure of 75 Kg. transmitted on the base of the sacrum. In four specimens, a very slight backward movement (under 0.5 mm.) was observed before the ligaments were cut, and since it was certainly caused by the settling of the pelvis as a whole, it has been disregarded in the calculation.

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[4] Brooke: J. Anat. 58, 1924.

The total range of movement, which included movement taking place immediately after severing the ligaments and any additional movement during the next half hour, averages for the thirty specimens 1.1 mm.

The control specimen showed a backward movement of the indicator over a total range of 1.5 mm. The average rotation for the thirty specimens taking place immediately after severing the ligaments (first reading) was 0.73 mm. The average amount of rotation one-half hour after the ligaments were severed (second reading) was 0.36 mm.

The second indicator, which extended horizontally backward from the lower segments of the sacrum, showed that a slight downward displacement occurred after the force was applied; therefore, a combination of two movements resulted under the application of force: the one a downward displacement, the other a backward excursion of the lower part of the sacrum.

SUMMARY

The experiment has shown that in thirty recent specimens of the pelvis and lower spine, the former fixed upright and the latter under pressure of 75 Kg.: (1) with the sacrotuberous and sacrospinous ligaments intact, no backward movement of the lower part of the sacrum occurred; (2) when these ligaments were severed, a slight backward movement of this part of the sacrum occurred in every case; (3) a tendency to a slight increase in range of backward movement was correlated with increase in age.

CONCLUSION

The test as described indicates that the sacrotuberous and sacrospinous ligaments function and are efficient in limiting the backward movement of the lower end of the sacrum only over a very short range; fixation of the sacrum beyond this short range depends on agencies other than these two pairs of ligaments.

FUNCTION OF LIVER IN RELATION TO OPERATION ON GALLBLADDER AND DUCTS *

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The peculiar menace that attends operations on the gallbladder and particularly operations on the common duct, because of the possible resultant interference with the function of the liver, is a constant challenge to the surgeon, who must repeatedly review both the immediate and the remote results of operations on these structures, that he may develop methods which will lead to the utmost conservation of the liver function.

Of prime importance is the decision in each individual case as to whether the gallbladder shall be excised or drained. Dr. W. J. Mayo led the movement toward excision instead of drainage to the general advantage of the patient. In certain cases, however, cholecystectomy is definitely contraindicated. These cases are defined by Moynihan as follows:

> Broadly speaking, cholecystotomy will be demanded where there are the acute infective conditions for which instant relief is necessary and in the patients whose powers of withstanding the shock of any detailed operative procedure are small. That surgeon will have the best results who does not always follow any method, but, taking a just estimate of his patient's powers, chooses that measure of relief which seems to him, in each case, to be the best, and is the one in the practice of which he is the most expert. This is more especially the case in gallstone surgery, for so many conditions, each one a menace to the patient's life or comfort, may be present at the same time. A stone in the ampulla, infective cholangeitis, cholecystitis with ulceration of stones into the liver, for example, are not infrequently present at the same time. For the gallbladder condition alone, cholecystectomy would be correct. But whether, in such circumstances, it should be done in the presence of the other conditions will depend on the patient's condition, the difficulties or the ease of that particular operation, the surgeon's former experience, and so forth.

My associates in the Cleveland Clinic and I have records of 1,682 operations on the gallbladder, including 786 in which drainage was done and 740 excisions of the gallbladder. On the whole, the end results in cases in which drainage was done have not been as satisfactory as the end results in the cases in which the gallbladder was excised. On the other hand, if the immediate mortality and end results of a series in which excision was done in every case regardless of age, physical state, general health, the presence of an acute infection, the existence of complicating diseases, obesity, high blood pressure, respiratory diseases, cardiorenal diseases, diabetes, etc., could be compared with the immediate mortality and end results of a similar series in which only drainage was done, the difference would not be marked. A cholecystectomy in every case, regardless of the local or the general condition, would inevitably show a higher immediate mortality but better end results than would follow drainage under the same conditions. It seems paradoxical, but it is a fact, that cholecystectomy is safest when the indication for it is least clear. Drainage is safer when the general hazard is most clearly defined. It follows, therefore, that the surgeon must weigh every factor with meticulous accuracy.

OPERATIVE ERRORS

What are the factors that contribute to unfavorable end results?—And no series of cases, however carefully the decision regarding the type of operation be made, is wholly free from them. Aside from the unfavorable end results that are due to faults in technic, the most common error into which the surgeon is liable to fall is that of operating on suspicion in the absence of a well defined pathologic condition. In such cases the unhappy end results parallel those which formerly and even now sometimes follow a gastro-enterostomy or an appendectomy performed as the result of suspicion rather than a well defined pathologic indication; or the replacement of an innocuous retroverted uterus; or the anchoring of a floating kidney on the basis of circumstantial rather than definite evidence; or, as has been pointed out in particular by Judd, the performance of operations on the variant or the neurasthenic because of various chronic illnesses associated with digestive disorders. Such cases as these form no inconsiderable group.

In the case of operations on the gallbladder, this error is being rapidly corrected by the progressive improvement of diagnostic methods. One of the most useful advances in this field has been that contributed by Dr. Evarts Graham through the development of the dye test. By progressively improved technic the roentgenologists are able in many cases to aid in the establish-

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* From the Cleveland Clinic.

* Read before the Section on Surgery, General and Abdominal, at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926

ment of the diagnosis either by positive evidence on the roentgen-ray film of calculi or of thickened gallbladder walls, or by the no less important indirect evidence, such as deformities of the duodenal cap or the ruling out of other pathologic conditions, such as kidney stones or tumors. Dr. B. H. Nichols of the Cleveland Clinic has made correct diagnoses from the roentgenograms—his findings being confirmed at operation—in 72 per cent of our cases of gallbladder disease. The increasing collaboration between the roentgenologist, the internist and the surgeon, together with laboratory studies of the blood, in particular the examination of the serum of the blood to determine the presence of bile, with the resultant checking up of the negative as well as of the positive evidence, has greatly increased the accuracy of the preoperative diagnosis of gallbladder disease, which now approaches the accuracy of the preoperative diagnosis of gastric and duodenal ulcer.

Another operative error that leads to unfavorable end results is faulty drainage, which may result in adhesions that interfere with important functions. Faulty drainage may create a well rather than a stream; that is, too much fluid may accumulate before it escapes. In consequence, the argument is often advanced against drainage that it retards convalescence and creates considerable later functional disturbance. This error may be largely eliminated by substituting for the up-hill drainage a "gravity drainage" through Morrison's pouch. Morrison's pouch is dependent so that the accumulation of fluids will be avoided and, owing to its position, the resultant adhesions are not at such vulnerable points as those caused by an anterior drain. Moreover, by using this method of drainage, the primary abdominal incision can be closed at once.

Flint and Eisendrath have called attention to the importance of a thorough knowledge of the ill results that follow injuries to the bile ducts, the former in particular having made an elaborate study of the abnormalities in the anatomy of the bile tract and of the bile ducts in particular. To emphasize the importance of the certain identification of the ducts in the course of the operation, Flint makes the statement:

> The commonest blunders committed at the primary operation are (1) leaving the gallbladder, through an inadequate appreciation of the earlier signs of cholecystitis; (2) overlooking a stone in the cystic or common duct; (3) injury to the common or common hepatic duct; (4) injury to an accessory hepatic duct.

In most instances, the surgeon can see clearly whether the common duct is dilated. If it is not dilated, the diagnosis of common duct stones is probably wrong. If it is dilated, the dictum of Kerr should be followed; that is, it should be opened and explored for stones. If the duct is normal in size, if there are stones in the gallbladder, and if there have not been chills, fever or jaundice, then there is no reason for opening the common duct for exploration; but it should be critically examined from one end to the other with the thumb and finger. Not only is there no indication for opening the duct if it is normal in size, but it is bad practice to do so; for not only will the patient not be benefited but he will invariably be harmed and may even pay with his life for the unnecessary procedure.

It should be remembered that a dilated duct is much more easily opened and explored than a common duct of normal size, for the enlarged common duct may be easily incised and explored and readily closed; or if it is deemed well to close it by suture, then its enlarged caliber assures against its being closed by cicatricial contracture as the result of drainage or the repair of operative injury.

OPERATIVE TECHNIC

As for the technic of the cholecystectomy, that, like the choice of the operation itself, can be governed by no fixed rule, except that, in view of a fundamental conception of the importance of liver function, liver function must be conserved. As is markedly demonstrated by Deaver in his clinic, this is accomplished directly by ample exposure, bloodless dissection, clear vision, minimum trauma, minimum anesthesia, optimum temperature; and indirectly by the conservation of the patient's resources as a whole. If the field is amply exposed, if the tissues are never blood stained, if the dissection is sharp, if every important structure, namely, the common duct, the cystic duct, the base of the gallbladder, the cystic artery, are clearly seen and are definitely identified, then it matters little how the gallbladder is removed, although in many instances the gallbladder is best removed from below upward, since the blood vessels may thus be secured earlier and a somewhat drier field maintained.

When the excision of the gallbladder is made from above downward, hemorrhage is best controlled by compressing—not crushing— the base of the gallbladder, including the arteries, with curved forceps, care being taken to avoid the common and hepatic ducts. This approach from above downward is the easiest route to a clear exposure of the arteries and cystic duct, and if the field is handled carefully there is no possibility of injuring the common duct and hepatic vessels. In many cases, however, as stated above, the best direction of the dissection is from below upward. Whichever direction is followed, as clear a dissection of every structure must be made as in an operation for hernia. No accident can happen if the following prime factors are assured: a wide opening through Moynihan's paramedian incision; relaxation of the abdominal walls by regional block; bloodless dissection, and wide exposure of the field by means of the Deaver retractors.

At operation, the surgeon's mind should be directed to the performance of a clearly defined, bloodless, true anatomic dissection, the power of the patient to undergo the operation having been well established in advance. The bad risk patient with gallstones, like the bad risk goiter patient, will have been subjected before operation to a sufficiently prolonged preparation directed to the restoration of the normal clotting time, to the establishment of the normal water balance, to alkalization by means of the subcutaneous infusion of glucose and sodium bicarbonate, to the promotion of the function of the heart and kidneys; while blood transfusion, rest in bed, controlled environment and proper diet will have done their share to widen the margin of safety.

But even when all these measures have been employed in advance of the operation and after the most painstaking operative technic and careful postoperative care, in certain cases the liver function will still fail dramatically after the operation, this failure being evidenced by suppression of the bile or by an excessive secretion of bile of a poor quality, and—of still more ominous significance—by a rapid decline in every function, both mental and physical. It is probable that a biophysical explanation of this dramatic sequel will be found—an explanation that may solve the mystery now surrounding the function of the liver, thus explaining why failure of the liver with such relentless certainty destroys the organism as a whole.

One biophysical fact regarding liver function has already been established, a fact that has a direct bearing on the conservation of liver function in cases in which, by the back pressure of bile or by long continued gallbladder disease or by some other cause, the function of the liver has been disturbed. It is the thermogenic function of the liver whereby one third of the heat of the organism is produced. By experimental researches in the biophysical laboratories of the Cleveland Clinic, it has been found that the introduction of heat within the abdomen causes an immediate rise not only in the temperature of the liver but also in the temperature of the brain, the rise in the temperature of the brain occurring synchronously with the change in the temperature of the liver. It would follow from this observation that the application of heat to the liver should in a large part counteract the effect of operations on the liver and bile ducts. As a result of our interpretation of this experimental fact, we have been applying heat to the liver by means of diathermy, which we have found to be an ideal method of holding the temperature of the liver at a normal level. One plate of the diathermy apparatus is placed on the lower chest on one side and the other is brought opposite the dome of the liver. The current can thus be continually applied during the operation, and the temperature of the liver and the abdominal viscera can be maintained at or above the normal throughout the operation, regardless of the exposure of the intestines; moreover, the application of the diathermy current during the immediate postoperative hours is of great aid in carrying the patient through that critical period.

As I have stated elsewhere in former papers, a lowered temperature of the liver, and hence impairment of the whole organism, may be induced by ether anesthesia: While this effect may to some extent be counteracted by the application of heat, the best method of protection is to substitute for ether the anesthetic which our researches have shown produces very slight lowering of the liver temperature, namely, nitrous oxide; and in especially bad risk cases not to allow the patient to pass beyond the stage of analgesia, relying principally on regional anesthesia.

By the general plan of management which I have outlined above, plus the application of heat during and after the operation by means of diathermy, our immediate postoperative results have been transformed so that the safety in bad risk operations on the gallbladder and ducts has been apparently doubled.

ABSTRACT OF DISCUSSION

Dr. A. S. Lobingier, Los Angeles: The function of the liver has become a most important item in those infections heretofore ascribed largely to the gallbladder itself. One of the most important points made is the necessity for careful preparation of the patient to go through the ordeal that is usually necessary in one so infected. Most of these infections are chronic and cover a long period. The changes in the liver are not acute changes, but changes that have been going on for a long time. If we consider this and the correlated changes that occur in other structures of the body, such as the myocardium and the splanchnic musculature, which is made up of the same variety of muscle fiber as the heart, we can explain many of the real difficulties and hazards that confront us when we come to do a cholecystectomy or complicated duct drainage. I approve highly of Dr. Crile's conservatism with respect to the common duct. It is best to do just as little surgery on the common duct as possible. Prolonged drainage of the common duct with the T tube may result in a stricture, a condition we should always try to avoid on account of its embarrassing complications. We have for the last few years been draining the liver by doing a cholecystectomy on the lower portion of the gallbladder from which the mucosa is removed and into which is inserted, about 1 cm. from the common duct, a firm tube, tied in with forty day chromic catgut. Drainage of the liver would not be justified unless we found that there was a hyperemia or an edema of the liver. If the liver is thin edged and normal in appearance, then there is scarcely any reason for prolonged drainage, and, of course, the drainage of the liver itself is justified only in those cases in which there is pathologic evidence of a continued and prolonged chronic infection. There are certain hazards in draining the liver which have been mentioned. If drainage exceeds from 7½ ounces to 9 ounces (225 to 265 cc.) in twenty-four hours, too much water is being withdrawn from the patient. I commend Dr. Crile's ingenious application of diathermy and other measures which will maintain the vitality of the patient, and his insistence that the bad risks in gallbladder and gallduct surgery may become comparatively safe risks if the function of the liver and its pathologic physiology receive the consideration they deserve.

Dr. George W. Crile, Cleveland: Diathermy is extremely useful during the operation; if the patient is ill afterward, it should be used after the operation at intervals of several hours during the day. Furthermore, in any condition of shock or acute depression, whatever it may be due to, diathermy, by raising the temperature of the body 1 or 2 degrees, increases the internal respiration on which life itself depends.

THE ACTION OF HEPATIC EXTRACT IN HYPERTENSION *

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Few problems in medicine are of greater interest and importance than the present intensive search for the cause and relief of high blood pressure. The constant increase in the life span has brought with it a great increase in the prevalence of diseases of middle age and after—a period during which arterial hypertension is particularly apt to appear.

A generation ago high blood pressure was synonymous with chronic interstitial nephritis, but the extensive clinical and pathologic work of the last twenty-five years has shown that this view is almost certainly incorrect.

High blood pressure, according to von Monakow,[1] is "a symptom which, similar to fever, has no uniform etiology." This observer states further that "lasting increase in blood pressure is always due to abnormal contraction of arterioles" and notes that such contractions may be due to nervous causes having their origin in psychic disturbances, to disturbances in internal secretions, or to poisons possibly of metabolic origin and that, lastly, they may have their origin in pathologic conditions of the kidney.

These views of von Monakow express the belief of many observers and call attention to the complexity of the problem from the standpoint of both etiology and therapy. If high blood pressure is merely a symptom without a uniform causation, we can hardly expect one

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* From the Department of Internal Medicine, the University of Kansas School of Medicine.

* Read before the Section on Pharmacology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[1] Von Monakow, P.: Blutdrucksteigerung und Niere Deutsches Arch. f. klin. Med. 133: 129 (Aug.) 1920.

particular form of therapy to be effective in all, or even perhaps in a majority of cases.

PREPARATION OF EXTRACT

In a systematic search for some product of metabolism having a pressor effect, we found that methylguanidine, a normal component of the urine, is capable of producing a marked and prolonged elevation of blood pressure in animals and in man.[2] A further study of the urine in certain cases of arterial hypertension showed a diminished output of guanidine compounds when compared with normal controls,[3] and in two patients suffering from a marked elevation of blood pressure we found a great increase in the excretion of guanidine coincident with a fall in blood pressure.[4] A systematic study of the guanidine content of the blood in patients suffering from arterial hypertension would be of great interest, but at present we have unfortunately no simple or accurate clinical method of making such estimations.

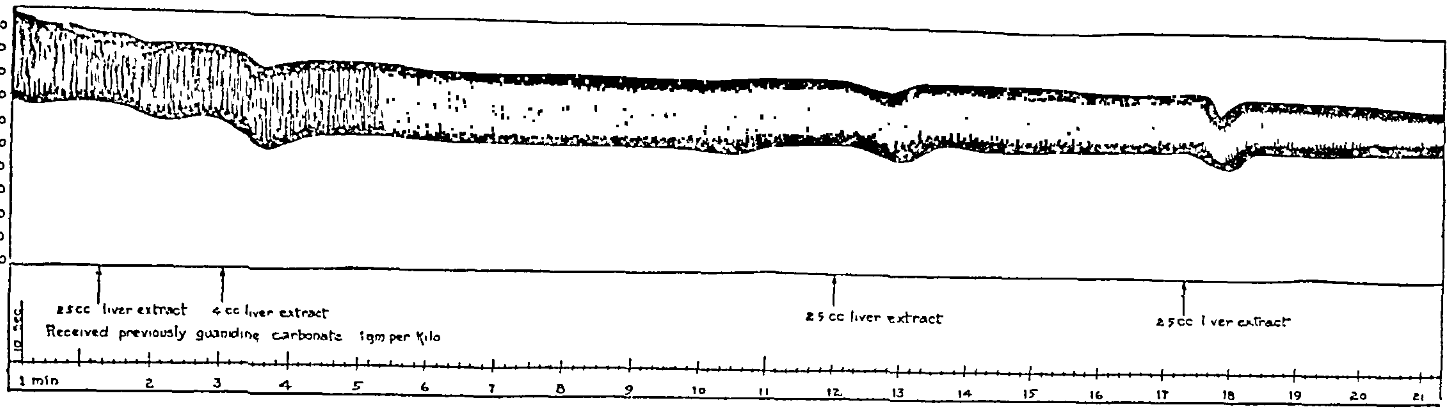

Fig. 1.—Effect of liver extract on hypertension due to guanidine carbonate: gradual reduction in pressure to normal.

In a series of experiments carried out in the laboratory, we have studied the action of various salts and organ extracts which lower the elevation in blood pressure produced by guanidine compounds. Among the various substances examined, the effects of certain liver extracts were very marked in both reducing and preventing what we may term a guanidine hypertension.[5]

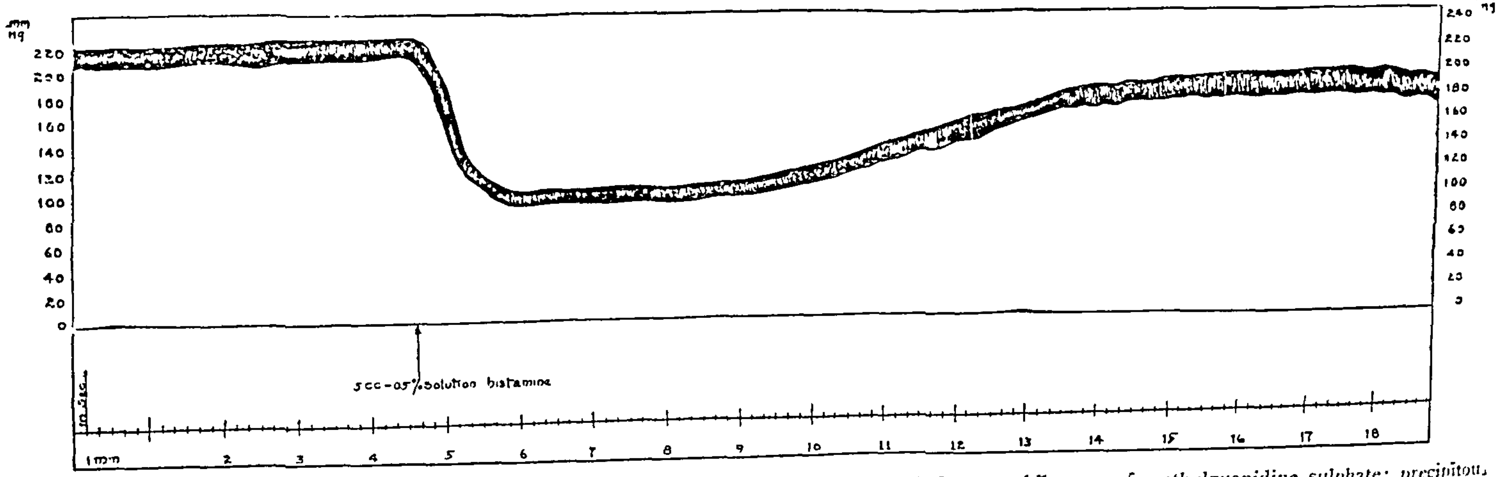

Fig. 2.—Effect of histamine solution on the hypertension produced by injection of 0.1 Gm. per kilogram of methylguanidine sulphate: precipitous fall of blood pressure to normal followed by a gradual rise.

Similar observations have been made by Macdonald,[6] who noted a marked depressor effect of certain liver extracts in arterial hypertension, and by James and Laughton,[7] and also by James, Laughton and Macallum,[8] who have studied the depressor effects of liver extracts on animals.

The liver extract with which we have worked is prepared by a process of alcoholic fractionation, the depressor substance being thrown down as a precipitate when an alcoholic content of approximately 90 per cent is reached. This precipitate is dissolved in distilled water and is further purified by repeated adjustments of the reaction. The final purified precipitate is dissolved in saline solution, giving a clear, slightly brownish solution, which contains in the concentrations usually employed a nitrogen content of 0.001 per cent.

EFFECTS OF INJECTIONS

It has been known for many years that certain organ extracts have a depressor effect when injected into animals, but such effects have been attributed by many observers to the presence of histamine, choline or peptone in the extracts employed. Because of these observations, it is of primary importance to determine whether the depressor effects of our liver extracts are due to these substances.

One of the strongest bits of evidence we have that the depressor effect we produce is not due to histamine is the type of curve obtained from the injection of liver extract. When we inject it slowly into an animal whose blood pressure has been elevated by methylguanidine, the blood pressure slowly falls to normal but does not reach a subnormal level unless very large doses are employed. This is in marked contrast to the sudden drop in blood pressure which is produced by injecting histamine solution into an animal whose pressure has been elevated by guanidine compounds. While liver extracts, when injected rapidly, may produce a rather rapid fall in pressure, a slower injection over the period of two or three minutes produces a steady and gradual decline in blood pressure to normal (fig. 1).

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[2] Major, R. H., and Stephenson, Walter: The Effect of Methyl Guanidine on the Blood Pressure, Bull. Johns Hopkins Hosp. **35**: 140 (May) 1924.

[3] Major, R. H.: The Possible Relationship Between Guanidine and High Blood Pressure, Am. J. M. Sc. **170**: 228 (Aug.) 1925.

[4] Major, R. H.: The Excretion of Guanidine *Bases in Two* Cases of Arterial Hypertension with Reduction in Blood Pressure, Bull. Johns Hopkins Hosp. **36**: 357 (May) 1925.

[5] Major, R. H.: Observations on the Cause and Treatment of Arterial Hypertension, J. Kansas M. Soc. **25**: 177 (June) 1925.

[6] Macdonald, W. J.: Extractives of Liver Possessing Blood Pressure Reducing Properties, Proc. Soc. Exper. Biol. & Med. **22**: 483, 1925; Extractives of Liver Possessing Blood Pressure Reducing Properties, Canad. M. A. J. **15**: 697 (July) 1925.

[7] James, A. A., and Laughton, N. B.: The Control of Blood Pressure with Liver Extracts, Canad. M. A. J. **15**: *701 (July) 1925.*

[8] James, A. A.; Laughton, N. B., and Macallum, A. B.: Studies on the Control of Blood Pressure with Hepatic Extract, Am. J. Physiol. **75**: 392 (Jan.) *1926.*

The behavior of the normal blood pressure to injections of liver extract is in marked contrast to that produced by histamine injections. A normal animal will withstand large doses of the liver extract without any fall in blood pressure, often from fifteen to twenty times the dose necessary to lower to normal an elevation in blood pressure produced by guanidine. Histamine solutions, on the other hand, of sufficient strength to lower the blood pressure produced by guanidine compounds will also depress the normal blood pressure of an animal. Very large doses of concentrated liver extract will lower the normal blood pressure, but their action on normal blood pressure is very feeble when compared with the powerful depressant action of histamine (fig. 2).

Histamine, as is well known, produces contractions of smooth muscle, such as the virgin guinea-pig uterus or intestinal loops. The liver extract with which we have worked produces no contractions of uterine muscle, which we would expect if histamine were its active principle. Stoland[9] has shown that the liver extract not only produces no contraction of the uterine or intestinal muscle preparations but, on the contrary, abolishes or depresses the action of guanidine. If a solution of histamine is added to a preparation made hypertonic with guanidine, the effect of this histamine is to produce an increase in tonicity. Later observations indicate that liver extract abolishes or depresses the action of histamine on smooth muscle.

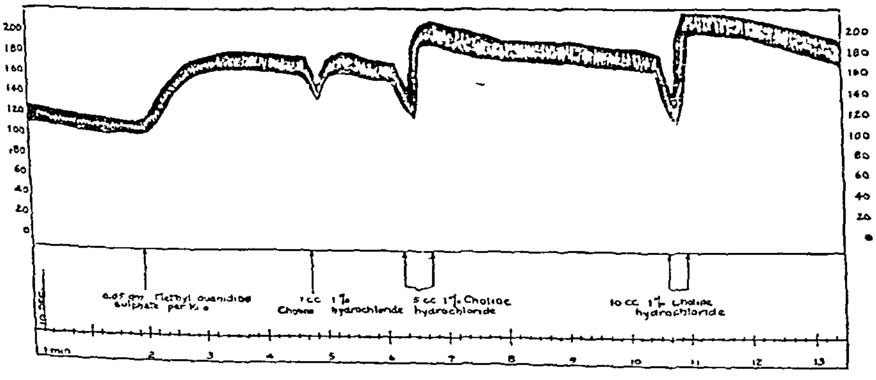

Fig. 3.—Effect of choline hydrochloride on the hypertension due to methylguanidine sulphate: sharp fall followed almost immediately by a gradual rise.

When aqueous solutions of choline hydrochloride are injected into dogs whose blood pressure has been elevated by guanidine compounds, two types of blood pressure curves are seen. In one group a fall of blood pressure is produced only when toxic or lethal doses are employed, while in the other group a fall to normal takes place gradually. In both types, however, the initial fall in blood pressure, which follows quite suddenly, is followed by a rapid rise in blood pressure, which lasts for several minutes and is succeeded by a fall, not to the normal level but to the previous high level induced by guanidine compounds (fig. 3).

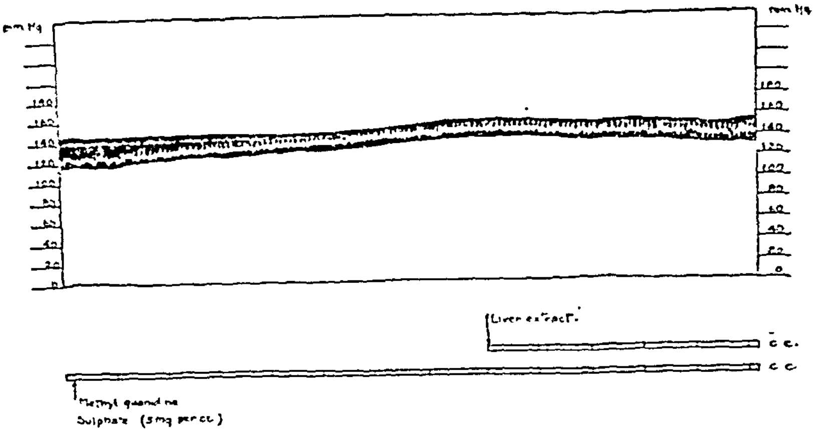

Fig. 4.—Method of standardization. Eight cc. of methylguanidine sulphate solution produced an elevation in blood pressure from 120 to 140 mm. of mercury. When the liver extract was introduced it was found that 1 cc. exactly neutralized 1 cc. of methylguanidine sulphate.

Atropine, according to Modrakowski[10] and Mendel, Underhill and Renshaw,[11] abolishes the effect of choline on blood pressure. We have shown in a previous paper that atropine does not interfere with the ability of our liver extract to lower the elevation in blood pressure produced by guanidine compounds.

Aqueous solutions containing both histamine and choline, when injected into dogs whose blood pressure has been elevated by guanidine compounds, cause a sharp fall in blood pressure to normal or subnormal levels, with a gradual rise in the latter instance to a normal level. Similar curves are obtained when such a solution is injected into normal controls.

We have given elsewhere the evidence that the depressor effect of the liver extract is not due to peptone.[12] The type of curve obtained with the liver extract differs materially from that seen when injections of Witte's peptone are employed and the sharp fall in blood pressure, the evidences of toxicity and the prolongation of the coagulation time are all lacking. The low nitrogen content of the liver extract and the absence of shock or anaphylactic reactions (when injections are given at time intervals) also make it fairly certain that the depressor effect is not a protein shock effect.

Before employing our liver extract in the treatment of arterial hypertension, it is obviously necessary to work out a satisfactory method of standardization. A method has been worked out, in collaboration with Dr. G. H. A. Clowes and Mr. E. E. Swanson, which gives an adequate index of the activity of liver extract. This method consists essentially in introducing a dilute solution of methylguanidine sulphate through the femoral vein of a cat or a dog until a definite rise in blood pressure to 20 mm. or more is produced, and then the liver extract is slowly introduced into the other femoral vein until the blood pressure is stabilized. The amount of guanidine solution injected is read off, together with the quantity of liver extract necessary to neutralize the guanidine. The temporary unit that we have employed is the amount of depressor substance necessary to neutralize 0.1 mg. of guanidine in an animal weighing 2.5 kilograms (fig. 4).

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[9] Stoland, O. O.: Smooth Muscle Reactions to Guanidine and Liver Extract, Am. J. Physiol. **76**: 213, 1926

[10] Modrakowski, G.: Quoted by Popielski, Arch. f. d. ges. Physiol. **128**: 191, 1909.

[11] Mendel, L. B.; Underhill, F. P., and Renshaw, R. R.: The Action of Salts of Choline on Arterial Blood Pressure, J. Pharmacol. & Exper. Therap. **3**: 649, 1911-1912.

[12] Major, R. H.; Stoland, O. O., and Buikstra, C. R.: Observations on the Effects of Liver Extract in Hypertension Produced by Guanidine Compounds, Bull. Johns Hopkins Hosp. **38**: 112 (Feb.) 1926.

We have treated up to the present time approximately 100 patients suffering from high blood pressure. This material represents ambulatory patients, patients under observation in hospital wards and those in private practice.

The difficulties in drawing conclusions from this experience are very great. Patients under observation in the hospital, although they are not confined to bed, have a definite limitation of activity which may of itself induce a fall in blood pressure. Patients who are treated in the outpatient department do not give us the desired opportunity for repeated blood pressure estimations; they are difficult to control and many of them are irregular in their visits or cease their visits from time to time. The patients seen in private practice, in whom many of the most suggestive results have been obtained, have not, as a rule, been subjected to such repeated blood pressure determinations, which weakens conclusions drawn on such a group. They have, however, been the group which, because of greater intelligence and perseverance, has carried out the treatment faithfully. They also had the least evidence of arterial, arteriolar and kidney involvement, and in many instances suffered comparatively little disability from their hypertension.

The most convincing group would be obviously the type that has suffered from arterial hypertension for a long time and whose range of pressure over a period of years is known. The treatment of this group has, as a rule, shown little evidence of specific effect. It is, however, quite possible that such patients with "fixed pressures" have such a degree of arterial or arteriolar change as to make them refractory to treatment. Many such patients also, as is well known, show no temporary response to nitrites or to other powerful vasomotor depressants, a finding that suggests such anatomic changes.

Theoretically, the group of patients who should respond best are those whose hypertension is of brief duration and in whom anatomic alterations have not yet taken place. We have seen many striking and relatively lasting falls of blood pressure in these patients. Such evidence is, however, not convincing, since it is always possible that these falls in blood pressure may be spontaneous and unrelated to treatment. Apparent spontaneous "cures" in arterial hypertension are repeatedly observed.

In many patients treated with liver extract, an improvement in symptoms has been the most striking feature noted. In some instances, the improvement in symptoms has been associated with a fall in blood pressure; in other patients, no such fall in pressure has been noted.

SUMMARY

We still feel, as previously stated,[13] that definite conclusions can be drawn only after a large number of patients have been treated over a long period of time. The evidence at the present time, that the liver extract is effective in certain cases of arterial hypertension, is very suggestive but is not conclusive.

THE MEASUREMENT OF THE CARDIAC OUTPUT IN MAN AND ITS VARIATIONS *

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The measurement of the amount of blood expelled by the human heart defied for many decades the numerous attempts that were made to solve this important problem of physiology. In recent years, however, methods have been developed, so that now exact measurements of the cardiac output can be made. These methods are entering the domain of clinical medicine, and bid fair to furnish important new knowledge of disease and of the action of drugs.

The approach to the problem of measuring the output of the heart has of necessity been indirect. The problem has been attacked by a variety of methods, but all of them have been focused on the measurement of the amount of blood that passes through the lungs each minute.

As long ago as 1870, the German physiologist Fick[1] laid down a principle by which the measurement of the pulmonary blood flow could be accomplished, and this principle has been the basis of much of the work bearing on this problem which has developed during the last fifteen or twenty years. Fick stated the rather simple principle that the cardiac output per minute could be calculated when the amount of oxygen consumed by the body each minute is measured and when the amount of oxygen removed from each unit of blood as it passes through the capillaries is determined. Thus, if 300 cc. of oxygen is consumed each minute and 5 cc. of oxygen is removed from each hundred cubic centimeters of blood, then it is necessary that sixty times 100 cc. of blood, or 6 liters, must pass through the lungs each minute in order to transport the 300 cc. of oxygen required by the body.

The same principle may be applied when carbon dioxide instead of oxygen is measured. When the amount of carbon dioxide exhaled each minute is determined and the amount taken up by each unit of blood is calculated, the amount of blood passing through the lungs each minute may be stated.

Many years elapsed after Fick laid down this principle before the means of its application were at hand. Physiology was obliged to await the development of physical chemistry and its application to biologic study before this principle could be applied to the measurement of the cardiac output. Means of measuring the consumption of oxygen and the elimination of carbon dioxide have long been known. But the measurement of the oxygen withdrawn from each unit of blood or of the carbon dioxide taken up by each unit of blood as it passes through the capillaries presented difficulties. In order to make these measurements, it is necessary to know the gaseous content of the arterial blood as it leaves the lungs, and also the gaseous content of the mixed venous blood, collected from all parts of the body, as it enters the lungs. With these data available, the oxygen withdrawn from the blood is readily determined by subtracting the venous oxygen from the arterial oxygen, while the carbon dioxide collected by the blood is determined by subtracting the arterial carbon dioxide from the venous carbon dioxide.

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[13] Major, R. H.: The effects of Hepatic Extracts on High Blood Pressure, J. A. M. A. 85: 251 (July 25) 1925.

* Read before the Section on Pharmacology and Therapeutics at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[1] Fick, A.: Sitzungsb. der phys.-med. Gesellsch. zu Wurzburg 16, 1870.

Accurate methods of blood-gas analysis have been developed, especially by the work of Van Slyke, and it is now possible to obtain arterial blood by puncture of the brachial or radial artery, and submit it to direct analysis.

The determination of the gaseous content of the mixed venous blood has been the most difficult problem in the application of the principle of Fick. To trace even the important steps that have been taken in the solution of this problem is beyond the scope of this paper. It may be said, however, that the way was opened by Pflüger's idea that the lungs act as an aerotonometer, and that the relation of the gases of the blood and of the air is the same in the lungs as it is under similar conditions of temperature and water vapor tension in a glass tonometer outside the body.

Plesch,[2] in 1909, demonstrated that, by means of rebreathing in and out of a rubber bag, a gas mixture can be obtained in which oxygen and carbon dioxide are in equilibrium with these gases in the venous blood entering the lungs, so that no changes occur in the tensions of these gases when they are exposed to the venous blood by being held in the lungs for a short period of time. His method had, however, an element of uncertainty, and was not readily used for determining the gaseous content of the venous blood.

METHOD OF MEASUREMENT

Burwell and I [3] have devised a method for determining the gaseous contents of the mixed venous blood by a more direct method, following the general idea of Plesch. By a respiratory method a gas mixture is obtained in which both the oxygen and the carbon dioxide are in equilibrium with these gases in the mixed venous blood of the subject being studied. A tonometer is then filled with this gas mixture, and a small amount of venous blood of the subject, obtained from a superficial vein, is introduced into the tonometer. The blood is then brought into equilibrium with the gases in the tonometer by rotating the tonometer at body temperature for twenty minutes. The blood is then withdrawn over mercury and analyzed for its oxygen and carbon dioxide content. The details of this method and the proof of its accuracy have been published elsewhere.[3]

Blood is also withdrawn from the brachial or radial artery, by arterial puncture, and its oxygen and carbon dioxide content is also determined by the Van Slyke method. Just before the foregoing procedures are carried out, the respiratory gases are collected during a six minute period in a large spirometer, so that the oxygen consumption and the carbon dioxide elimination can be determined by the Tissot method. After all the analyses of blood and air are completed, the following facts are known: the amount of oxygen consumed by the body each minute, the amount of oxygen in each cubic centimeter of blood leaving the lungs, the arterial blood and, in each cubic centimeter of blood entering the lungs, the mixed venous blood. The difference between the oxygen content of the arterial and the venous blood tells the amount of oxygen removed by the body from each cubic centimeter of blood. The data necessary to calculate the amount of blood discharged by the heart per minute are now at hand, as the amount of blood required to transport the oxygen consumed each minute is readily calculated by dividing the amount of oxygen consumed per minute by the amount of oxygen given up by each cubic centimeter of blood. The figure so obtained represents the output of each ventricle per minute. The output of the heart per beat is readily determined by dividing the output per minute by the heart rate per minute. Similar calculations are also made from the figures obtained by analysis for carbon dioxide. An important check on the method is the relation of oxygen and carbon dioxide in the blood and in the expired air. The proportion of the oxygen consumed to the carbon dioxide produced by the body per minute as determined in the expired air gives the respiratory quotient. The same proportion should exist between the amount of oxygen withdrawn from each cubic centimeter of blood and the amount of carbon dioxide added to each cubic centimeter as the blood passes through the body, if all analyses are correct. This gives the so-called internal respiratory quotient. The method gave almost perfect checks in this regard in a series of normal individuals.

TABLE 1.—*Method of Analysis and Relation of Respiratory and Circulatory Functions* *

	Oxygen, per Cent by Volume	Carbon Dioxide, per Cent by Volume	Oxygen Saturation, per Cent
Arterial blood	21.80	47.36	97
Mixed venous blood	16.55	51.18	74
Difference	5.25	3.82	23
Arm vein blood	13.57	52.92	61
Total gas exchange per minute (cc.)	235	176	
Circulatory minute volume (cc.)	4,480	4,600	
Output per beat	69	71	
Respiratory quotient, internal	0.73		
Respiratory quotient, external	0.75	$p_H = 7.34$	

* B. S. L., a normal subject; standard rest; pulse, 64; height, 180 cm.; weight, 62 Kg.; body surface area, 1.78 square meters.

Table 1 indicates the knowledge furnished by the various analyses, and shows the quantitative relation of the respiratory and circulatory functions. Table 2 gives the results of a series of determinations on normal resting individuals studied in a half reclining position, and shows the agreement obtained between the calculations based on the oxygen determinations and those based on the carbon dioxide determinations. All these determinations were done on subjects in the so-called basal state; that is, after a period of about half an hour of complete rest and about fourteen hours without food. This table shows the variations that occur in a small series of normal subjects under identical conditions, regarding the cardiac output both per minute and per beat.

Table 3 shows the striking variation in the cardiac output that was observed in a case of exophthalmic goiter before and after thyroidectomy. The determinations made on this patient before operation illustrate the mechanism by which the body meets the increased demand for oxygen, an outstanding feature of exophthalmic goiter. The output of the heart per beat is abnormally large, and the number of beats per minute is also increased. An interesting point in this observation is the fact that the cardiac output was increased beyond the actual need of the body for oxygen, as the amount of oxygen withdrawn from each unit of blood as it passed through the capillaries was less than that withdrawn in normal resting subjects. The withdrawal of oxygen was also distinctly less than occurred in this subject after thyroidectomy. This observation indicates that it is not the increased demand for oxygen alone that causes acceleration of the heart in exophthalmic goiter, but that there are other factors operative which increase the output of the heart beyond the needs of oxygen transport.

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[2] Plesch: Ztschr. f. exper. Path. u. Therap. 6:380, 1909.

[3] Burwell, C. S., and Robinson, G. C.: J. Clin. Investigation 1:47, 1924.

A comparison of the output of the heart per beat before and after thyroidectomy indicates the striking change that may take place in cardiac output. There are now numerous observations reported in the literature which fully substantiate the fact that the heart may more than double its output per beat. The recent work on this subject refutes the contention that Yandell Henderson[4] has held for years, on insufficient data, that the output of the heart per beat is essentially constant, and that its output per minute is regulated by variations in rate. Recently Henderson[5] has acknowledged that this view of the cardiac output can no longer be upheld.

Important observations regarding the variations in the output of the heart have recently been made by Field and Bock,[6] who found that definite changes in the output of the heart occur with changes in position of the subject. In the prone position the cardiac output is definitely greater than when the subject is sitting, and a further diminution occurs when the erect position is assumed. Because of this fact, it is necessary that the position of the subject should always be stated in reporting results, and that the position should be kept constant whenever comparable determinations of the cardiac output are desired. This observation is also of interest as explaining the fact that patients with cardiac insufficiency are more comfortable in the sitting position. The bearing of the diminished cardiac output to orthopnea has been fully discussed by Field and Bock, and their observations are in accord with other facts that have come from studies on the output of the heart, indicating that relief of symptoms from cardiac failure is often obtained by measures that diminish the cardiac output.

TABLE 2.—*Results of Determinations on Normal Resting Individuals*

Subject	Oxygen Consumption per Minute, Cc.	Oxygen Utilization, per Cent by Volume	Minute Output, Cc.	Heart Rate	Output per Beat, Cc.	External Respiratory Quotient	Internal Respiratory Quotient
1. A.	231	6.53	3,520	54	65	0.76	0.72
2. H. (1).....	231	6.05	3,820	61	63	0.79	0.83
3. R. (1).....	236	5.97	3,950	68	58	0.85	0.81
4. R. (1).....	238	6.01	3,960	72	55	0.79	....
5. H. (2).....	230	5.59	4,120	64	64	0.81	0.81
6. G.	192	4.28	4,480	65	69	0.82	0.76
7. L.	235	5.25	4,480	64	70	0.75	0.73
8. M.	249	5.47	4,550	66	69	0.76	....
9. B. (1).....	208	4.55	4,540	62	73	0.79	0.76
10. P.	240	5.16	4,650	56	83	0.78	0.72
11. K.	215	4.09	6,000	68	88	0.71	....
12. B. (2).....	213	3.14	6,780	66	103	0.75	0.75
Range.........	192 to 249	6.53 to 3.14	3,520 to 6,780	54 to 72	55 to 103	0.71 to 0.85	0.72 to 0.83

Evidence for the belief that the relief of acute cardiac failure is brought about by diminishing the cardiac output has been furnished especially by the work of Eppinger, von Papp and Schwartz,[7] who have carried out an extensive investigation of the output of the heart in man under various conditions of health and disease, with emphasis on the study of paroxysms of cardiac dyspnea. They have found that morphine may reduce the output of the heart 30 per cent per minute, and in one case in which the effect of digitalis was studied, the output of the heart was reduced from 5,570 cc. to 4,100 cc. a minute, a reduction of 23 per cent. These authors also show that great increase in cardiac output accompanies sudden cardiac failure, with severe dyspnea and pulmonary congestion. These observations throw new light on the problem of the mechanism of cardiac failure, and point the way to a better understanding of how relief is to be obtained.

TABLE 3.—*Blood Flow in a Patient with Hyperthyroidism*

	Oxygen Consumption per Minute, Cc.	Oxygen Utilization, per Cent by Volume	Minute Output, Cc.	Heart Rate	Output per Beat, Cc.	Basal Metabolic Rate
Before thyroidectomy.	253	2.53	10,000	112	89	Plus 58%
After thyroidectomy...	168	3.44	4,890	78	63	Plus 1%

ANIMAL EXPERIMENTATION

Work is now being carried on by members of my staff, Dr. Harrison and Dr. Leonard, in order to determine the influence of digitalis on the output of the heart of the dog. Although the work is still in progress, it has reached a stage at which it may be stated that digitalis, administered intramuscularly as digifolin, in doses comparable to those used therapeutically, generally causes a definite diminution in the cardiac output per minute, frequently amounting to a reduction of 25 per cent of the output before the drug is given.

The cardiac output in dogs may be estimated by the collection of the expired air in a spirometer and by determining the gaseous content of arterial and venous blood withdrawn directly from the right and left ventricles. Cardiac puncture is carried out without injury to the animals and without pain, as quiet animals submit to the procedure without struggle or other evidence of discomfort.

ETHYL IODIDE METHOD

Time does not permit a discussion of other methods for determining the output of the heart. However, mention should be made of the ethyl iodide method recently published by Henderson and Haggard.[8] Ethyl iodide is a volatile liquid, the vapors of which are taken up by the blood from the lungs in a definite proportion of the vapor present in the lungs, each liter of blood passing through the lungs taking up twice the amount contained in each liter of alveolar air. Ethyl iodide is, according to Henderson, destroyed in the body, so that practically none of it is returned to the lungs. A small amount of ethyl iodide is vaporized in the air to be breathed. By analyzing the inspired and expired air as well as samples of alveolar air for ethyl iodide, data are obtained which indicate the amount of blood flowing through the lungs per minute. This method is a great improvement as regards the time and technical skill necessary to determine the output of the heart. However, there is reason to doubt its accuracy. The method has been carefully applied by a member of my staff, who was unable to obtain results that were satisfactory, and the method has not proved successful in the hands of other workers well trained in respiratory methods. It is to be hoped, however, that the method may prove all that is claimed for it by its originator, as it will open the important field of quantitative study of the circulation to many workers, and much of value is sure to result. A simple method of measuring cardiac output, applicable to patients and not requiring special technical training, is much to be desired. Probably no method would yield results more needed at the present time for a better understanding of much that is now obscure regarding the circulation and its disturbances.

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THE ANTIPRESSOR FRACTION FROM LIVER TISSUE AND ITS PHYSIOLOGIC ACTION[*]

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The methods of extraction used in separating the antipressor fraction from hepatic tissue are varied but simple. The original preparations were obtained by freezing and thawing the liver mash in Locke's solution and then removing the proteins and peptones from the saline extract. The present method involves the ues of boiling water in appropriate amounts and degrees of acidity and is much more effective. On the other hand, the problems of purification, standardization and stabilization are complex and are fraught with considerable difficulty.

The boiling acidulated aqueous extract is the most suitable method for the removal of the coagulable proteins. Acetic acid is quite effective, although other acids may be used, if due regard is had for the hydrogen ion concentration.

Throughout the entire procedure, it is necessary to prevent oxidation taking place in the extracts, as the active principle is apparently extremely labile and is readily destroyed. We are having encouraging results by using reducing substances designed to minimize the effect of any heat stable oxydases of the liver or even simple oxidation, which so readily takes place. Sodium sulphoxylate and sodium hydrosulphite have been found satisfactory.

Alcohol is a suitable reagent for removing peptones and also for the fractional precipitation of the active material, though in the latter case it does not give a clean separation of the depressor substance from protein material. The peptones may be effectively and entirely removed by neutral lead acetate from an extract made up to 50 per cent alcohol. The excess lead is removed from the filtrate by hydrogen sulphide. Precipitating with lead acetate from aqueous solution alone gives preparations lower in potency than when alcohol is used. This is probably due to the lead acetate, as the hydrogen sulphide is not deleterious. The lead carries down the bulk of the pigment, and the rest is removed by decolorizing charcoal, which, with due care, does not adsorb the active material to any appreciable extent.

The alcohol can be removed by distillation at normal pressures and the residue concentrated on the steam bath without loss of the depressor element, provided the acidity is maintained. This simple extract, which is protein and peptone free, can be used safely. It is a mixture of various bases, but all adventitious matter seems innocuous. If proper precautions are taken in the preparation of the extract, no trace of histamine or choline is present. The reagent used for testing for histamine is p-diazobenzene sulphonic acid, which is prepared fresh as required. The iodine crystal method is used for detection of choline.

From extracts prepared by the foregoing methods, the active principle may be precipitated by phosphotungstic acid. By means of extraction with ether, it may be separated under certain conditions from the bases precipitated by phosphotungstic acid. The latter property would preclude the possibility of identifying it with histamine. Furthermore, the compound under ordinary conditions is extremely unstable. Its potency is of longer duration in an acid medium, but even then it ultimately deteriorates. This instability is not characteristic of histamine or choline.

The physiologic effects of these extracts are entirely different from those of histamine and chlorine. There is no flushing, as is the case with histamine. The duration of the fall in blood pressure is much more prolonged than with histamine, lasting for several hours. Following the injection in experimental animals, there is no cardiac or respiratory change that cannot be accounted for by the fall in blood pressure. A diminution of kidney and splenic volume following administration of the extract has been noted. The exact mode of action of these extracts is still obscure, but it is believed that the principal effect is on the small arterioles. Experiments along similar lines have been carried out by Major and Stolland, and their results point to a similar conclusion.

Major and Stolland have further shown the antagonistic effect between methylguanidine and the depressor principle from the liver. Not only is there antagonism between these substances with respect to blood pressure, but also the contraction of smooth muscle caused by methylguanidine is inhibited by the liver extract. In view of these facts, Major has advanced the hypothesis that methylguanidine, which he showed to be excreted in increasing amounts following the administration of hepatic extracts, might possibly be a fundamental causative agent in hypertension.

Our clinical results with liver extracts to date have been gratifying. In some patients, the depression in blood pressure was very gradual, and the lowest point was reached many hours after the injection. In other cases the effect was immediate and persistent. At the present time, the clinical data accumulated are not exhaustive. Unfortunately, the instability of the depressor principle under the most favorable conditions is such that the extracts have to be administered freshly prepared to insure the best results.

As to the chemical nature of the depressor substance, we are as yet in ignorance. However, the effects of tetra-ethyl-ammonium compounds on the blood pressure in dogs more nearly resembles those obtained by the use of liver extracts than do other known depressor substances.

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[*] From the departments of biochemistry and physiology of the University of Western Ontario Medical School.

[*] Read before the Section on Pharmacology and Therapeutics at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[Editorial Note.—This paper, together with the two papers that precede it, by Dr. Major and by Dr. Robinson, constitute part of a symposium on "Cardiovascular Hypertensive Disease and Its Treatment." The two concluding papers, one by Dr. Brown and the other by Dr. Miller, together with the discussion, will be published in the next issue of The Journal.]

DAILY VARIATIONS IN COMPLEMENT FIXATION (KOLMER) AND PRECIPITATION (KAHN) REACTIONS

IN UNTREATED SYPHILITIC PATIENTS *

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Several observers have described variations in the strength of the complement fixation reaction in untreated patients with syphilis. Recent studies with both the Kolmer complement fixation and the Kahn precipitation tests for syphilis have shown such a high degree of specificity and sensitiveness that this question seemed worthy of restudy.

It should immediately be noted that this study does not take into consideration the variation in complement fixing and precipitating substances occurring in treated syphilitic patients. It is a well known fact that such variations, particularly in those treated with the arsphenamines, are very common and the rule. This explains the reluctance with which one pronounces "cure" even after prolonged treatment of chronic syphilis; relapses in our experience have been observed as late as one year after the last negative blood complement fixation test. It may be noted further that the conflicting reports not infrequently obtained from different laboratories have nothing to do with the present study but are undoubtedly due to technical errors.

The question really merits attention from both a clinical and a diagnostic point of view. In a previous communication,[1] it was stated that one of the reasons for the frequent examination of the blood required in the performance of the provocative test was the fact that daily variations in complement fixing substances had been said to occur. According to previous observers, the variations in complement fixing substances—no such reports deal with flocculation tests—may be so great as to pass from a strongly positive to a negative reaction in twenty-four hours. With a patient, suspected of being syphilitic and who gives a negative complement fixation test, a second test is usually demanded. If, however, no such extreme variations occurred with the new tests, particularly if one was used as a check on the other, one would certainly feel more secure in a negative finding.

LITERATURE

Craig,[2] while performing examinations of serums for the Wassermann test, frequently observed cases in which the reaction varied from a strongly suspicious one to a plus minus, or frankly negative, one within intervals of one or two weeks, while in a few cases a positive reaction had become negative within the same period of time, the patients in the meantime having received no treatment.

In the first instance, as has already been stated, such variations are known to occur frequently in treated syphilitic patients, although their cause remains obscure. In the second instance, however, such occurrences are not generally known. Although these anomalous results of Craig were not numerous, the importance of the finding in patients suspected of the disease, as well as the fact that most physicians had grown to believe that the strength of the reaction was an invariable quality, led him to an experimental study of the blood serum in ten untreated cases of syphilis, the titrations covering seven days in each instance. He concluded that great variations may occur in the complement binding power of the serum of patients uninfluenced by any kind of treatment; that a single negative or a doubtful positive is of no

Variations in Both Kahn and Kolmer Tests in Eight Cases Out of Fifty Studied

1. F. S.	1	2	3	4	5	6	7	8	9	10	11	12
Kolmer	++	++	++	++	++	++	++	++	+	—	—	—
Kahn	+++	++	++	++	++	+	++	++	++	+	—	—
2. G. D.												
Kolmer	+	+	+	+	+	+	+	+	+	++	++	++
Kahn	—	—	—	—	—	—	—	—	—	—	—	—
3. B. J.												
Kolmer	+++	+++	+++	+++	—	+	+++	+++	++++	++++	++++	++++
Kahn	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++
4. F. M.												
Kolmer	—	++	—	—	—	—	+	—	—	—	—	—
Kahn	+	—	++	++	++	++	++	++	++	++	++	—
5. E. S.												
Kolmer	++	++	++	++	++	+++	+++	+++	++	—	++	++
Kahn	+++	+++	+++	+++	++	++	++	+++	—	+++	+++	+++
6. F. D.												
Kolmer	++	+++	+++	+++	+++	+++	+++	+++	++	++	++	++
Kahn	++	—	++	++	++	++	—	—	—	—	+	++
7. J. V.												
Kolmer	+	+	+	+	++	++	++	++	++	++	++	++
Kahn	++	++	++	++	++	+	++	—	++	++	++	++
8. A. H.												
Kolmer	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++
Kahn	+++	+++	++	+++	+++	+++	++	++	+	+++	+++	+++

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[1] Greenbaum, S. S., and Wright, C. S.: Am. J. Syph. 8: 4 (Oct.) 1924.

[2] Craig, C. F.: Variations in the Strength of the Wassermann Reaction in Untreated Syphilitic Infections, J. A. M. A. 42: 1232 (April 18) 1914.

value in excluding syphilis, and that the occurrence of these natural variations must be carefully considered in the diagnosis and control of treatment. As in all the instances of variations the subsequent tests resulted positively, it appeared that they were the result of a reduction or absence of complement fixing substances.

Thaysen[3] applied the complement fixation test repeatedly to sixty-six persons and, despite a scrupulous technic under conditions alike in all, found reactions which showed a wide range from negative to positive or dubious with fluctuations from time to time.

Haller,[4] on the other hand, studied twenty cases of untreated syphilis and concluded that the variations occurring in the daily titration, provided the antigen is constant, are due to variations in the hemolytic system.

METHODS

The tests were conducted by Kolmer's method, a routine technic with unabsorbed serum and the same antigen throughout the series being used. The Kahn tests were performed exactly according to the Kahn technic, except that serums were heated for fifteen instead of thirty minutes. The readings were made as soon as the tests were completed and again the next morning after the serums had stood in the refrigerator. It was found that this increased the delicacy of the test. The reports are based on morning readings. The same antigen was used throughout and was supplied by Dr. Kahn.

The blood of fifty untreated syphilitic patients was examined on twelve consecutive days. In most instances, from four to six tests, representing the accumulated serums of from four to six consecutive days, were done on the one day. In other words, specimens were kept on the average of one week, and the series run through at one time with the same reagents.

RESULTS AND CONCLUSIONS

Of the fifty patients studied, forty-two gave uniform complement fixation and precipitation tests with only slight variations throughout the series. In the remaining eight, variations occurred in one or the other tests, as shown in the accompanying table. These variations went from one extreme to the other, but a careful study of the table will show that one or the other test almost invariably caught up any failure in either to detect syphilis. In only two of the eight instances in which wide variations occurred were both tests negative on the same day during the series. This is extremely important and demonstrates the value of performing both the Kolmer and Kahn tests on a given serum. It is noted that variations occur with both tests, and that this is undoubtedly indicative of a change from day to day in the sum total of syphilitic substances present in the blood.

Our studies clearly support those of Craig, that there are variations and that these occur even when the serologic examinations are made with the refined and newer tests. Although our studies are substantially the same as those of Craig, yet with the newer and refined tests the percentage of extremely wide variation is very low, particularly with respect to an agreement on negativity on the same day in known syphilitic persons. In view of this, it may be definitely stated that if both tests are performed on a given serum, the variations may be ignored.

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STREET RISK OF CARBON MONOXIDE POISONING *

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Henderson and Haggard,[1] in 1923, reported the presence of carbon monoxide in recognizable concentrations in the air of New York and New Haven streets. Their discussion made physicians aware of the possibility of the existence of chronic or repeated carbon monoxide poisoning, to be looked for not only in the usual places, such as dwellings with leaky gas pipes, but also in streets where motor traffic was very dense. We decided to examine the blood of a number of subjects exposed in the most evident manner to the danger.

It appeared advisable to investigate traffic patrolmen. It was recalled that during the past few years many of these men, on duty in the most congested mercantile districts of Philadelphia, have complained at the end of the day's work of symptoms that might be due to slight carbon monoxide anoxemia: headache, slight nausea and muscular weakness. These symptoms were noted especially in men detailed to supervise the very heavy traffic movement at the ferries. All obtained relief when transferred to other sections of the city, free from the menace of automobile exhaust gases.

In the spring of 1925, one of us (W. T. D.), assisted in part of the work by Dr. M. E. Folinsbee, examined for carbon monoxide the blood of fourteen foot traffic patrolmen as they reported to headquarters from eight hours duty in the crowded section of the city. The method used was that of Sayers, Yant and Jones,[2] which gives colorimetrically the percentage saturation of the hemoglobin with carbon monoxide. The values found ranged from 0 to 30 per cent, with the two observers agreeing that six men showed values of about 20 to 30 per cent. The best accuracy of the method is within 5 per cent. The higher values found are consistent with slight headache and quickened pulse rate,[3] but it was not considered advisable to interrogate the men as to the existence of subjective symptoms.

Later in the year two of us (I. G. and E. D. W.) carried out a number of determinations with a specially designed modification of the Van Slyke constant volume gas analysis apparatus.[4] The method used was liberation of all the gases of the blood by acid ferricyanide and vacuum extraction, absorption of carbon dioxide and oxygen with alkaline pyrogallol, and absorption of carbon monoxide with gas-free Winkler's reagent. The

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majority of the determinations were accompanied by hemoglobin determinations by Haldane's method.[5] In eighteen foot traffic men, values of from 0.90 to 2.28 per cent by volume of carbon monoxide were found, and the saturations of the hemoglobin with carbon monoxide ranged from about 5 to about 13 per cent. These values may be somewhat low as the result of difficult retention under reduced pressure of carbon monoxide absorbed by Winkler's reagent.

Investigation shows that the present street risk of carbon monoxide poisoning from eight hours of maximal exposure is that up to about 30 per cent of the hemoglobin may possibly be temporarily saturated with carbon monoxide. "At about 30 per cent saturation very slight symptoms, such as slight increase of pulse rate, deeper breathing and slight palpitation, became observable during rest, and running upstairs was followed in about half a minute by dizziness, dimness of vision and abnormally increased pulse rate." [5] In the case of the policemen, it appears evident that the elimination of the carbon monoxide from the blood will be virtually complete by the morning after the day of exposure.[6] Should the anoxemia become severe and troublesome, the possibility of giving shorter hours of duty in crowded sections of the city clearly offers a ready solution.

CONCLUSIONS

The existence of a definite street risk of repeated or chronic slight carbon monoxide anoxemia is confirmed. Confirmation of such a diagnosis should be sought for by testing the blood for carbon monoxide. A quantitative method should be used.

THE INTRAVENOUS ADMINISTRATION OF SODIUM CHLORIDE IN BROMODERMA

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Because of the frequent occurrence of bromine and its salts in various "patent medicines," and its long-continued use in epilepsy and as a sedative in nervous disorders, cutaneous manifestations from its use are rather frequent. Waugh [1] clearly brings out this fact in a report of a case of bromoderma occurring in a man, aged 40, who had taken bromo-seltzer regularly for a period of two years. In an investigation of bromo-seltzer Waugh found that 1 drachm (4 Gm.) of the drug contained 7 grains (0.5 Gm.), the usual dose being half an ounce, and that one large drugstore in Chicago sold almost 1,500 pounds in a year's time. The pound size bromo-seltzer bottle always occupies a conspicuous place on our own soda fountains, and, therefore, it is also apparently consumed in large quantities in New York.

Bromism may appear after only a few days steady use of the drug, and it may manifest itself under unusual circumstances; for instance, Costello [2] reports an interesting case by placental transmission. The mother had taken large doses of bromine, but had not shown a bromine rash. The child had not been breast fed, yet three days after birth it developed a bromine rash. Much biochemical and physicochemical work has been done in order to discover the reason for the dermatologic outbreak from the ingestion of the drug, and much of it has proved contradictory. Szadek,[3] one of the earlier investigators, believed that the exanthem originated from an irritation of the sebaceous glands. Guttman [4] was of the opinion that the cutaneous reaction was due to the free halogen liberated by contact with the acid in or about the structures of the skin. These views persisted until later investigators, such as Laudenheimer [5] and von Wyss,[6] ventured the belief that the ingestion of bromine led to a gradual deposit of the drug in the tissues and the replacement by it of the normal chloride content. In this country, Engman and Mook [7] expressed the view that the lesions were more liable to occur at the site of previous inflammation and that trauma might play a part, thereby explaining the occasional predilection of a bromoderma for old seborrheic or acne areas. They also believed that a toxin, in itself caused by some disturbance, might be accountable for the lesions.

Wile,[8] in a notable article on the subject, stated that in no case has he been able to demonstrate the drug in the contents of lesions, and he believed that it was not present unless there was an admixture of blood serum. In a patient with pemphigus, who had been taking 20 grains (1.3 Gm.) of potassium bromide three times daily for three days, bromine was demonstrated in the contents of the bullae. The urine of patients taking bromide showed an increase of about double in chloride output, followed by a gradual approach to normal, notwithstanding the continued use of the drug; the normal, however, was not reached until some time after the drug had been discontinued. Bromine was found in the sweat and blood serum and, apparently, the theory of the substitution of bromine in the body fluids in the place of chloride was correct, the gradual increase of the bromine salts being accelerated by the difficulty of their filtration through the kidney.

In a later communication, Wile [9] brought out the fact that the stored up bromides could be replaced by the administration of large amounts of chloride, thus reversing the process of displacement of chlorides by the bromides. On this premise, he treated three patients with bromism by decinormal saline solution in doses of from 100 to 500 cc. The severest of the cases showed a marked reaction (chill; pulse, 140; temperature, 103 F., and cyanosis) after the first injection of 500 cc. A second injection of 100 cc., given two weeks later, was followed by no reaction, and the bromic eruption involuted rapidly, to complete disappearance after from two to five injections.

Guy and Jacob presented, before the Pittsburgh Dermatological Society, Nov. 15, 1923, a case of bromoderma with one of the lesions on the leg as large as 15.2 by 11.3 cm., which showed marked favorable response to the intravenous injection of physiologic sodium chloride solution, but bromine had not been found in the urine either before or after the injection. Andrews, at a meeting of the Manhattan Dermatological Society, presented a patient with fungating lesions on the hands, to whom he had given large doses of sodium chloride by mouth, with prompt involution of the lesions in three weeks. Within a few months of each other, three well developed typical cases of bromoderma appeared in Dr. Whitehouse's service at the New York Skin and Cancer Hospital One of these patients had been treated in the dermatologic ward for two months without any apparent effect on the lesions These cases responded so well to the intravenous injection of sodium chloride that they justify reporting.

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REPORT OF CASES

Case 1—A woman aged 22, with both pustular and condylomaform crusted lesions on the legs, stated that they had been present for two months For some weeks previously she had been taking some pills containing six or seven different ingredients, given her by a pharmacist who refused to let her have a copy of the prescription This woman remained in the hospital for two months on the usual treatment, without any apparent change in the lesions She was then given 50 cc of decinormal sodium chloride solution intravenously, and three times a week thereafter in doses up to 100 and 200 cc, the solution being changed from decinormal to normal after the first injections Within the first week the lesions involuted in a startling manner, and in six weeks they disappeared entirely.

Case 2—M S, a man, aged 26, born in Russia, presented numerous lesions on the face and lower legs of the papillocondylomatous type He stated that they had been present for a month For eight days prior to the appearance of the eruption, he had been taking the following prescription:

		Gm or Cc
℞	Sodium bromide	10
	Potassium bromide	
	Ammonium bromide	aā 8
	Elixir of pepsin	20
	Distilled water	ad 60

Sig I teaspoonful three times a day after meals

The patient came to the clinic, Feb 7, 1925 Local treatment was tried for a month without results His first intravenous injection of 100 cc of decinormal solution of sodium chloride was given, March 7 April 25, the injections were discontinued because of the fact that the lesions had disappeared, leaving only a few small scars In the interval between March 7 and April 25, the dosage administered was between 100 and 200 cc, given three times a week

Case 3—L A, a boy, aged 19, gave a definite history of bromide ingestion The lesions were located on the face and were papulopustular in character Several of them had coalesced to form large crusted patches with tender swollen bases The first injection of physiologic sodium chloride solution amounted to 100 cc Within four hours, a marked reaction supervened; the temperature rose to 100 F, the pulse to 100, and the patient felt uncomfortable Next day, the lesions flared up, but within forty-eight hours all these symptoms subsided, and the eruption markedly improved No reaction followed subsequent injections Six weeks later, the eruption had disappeared Twelve or fourteen urine examinations were, strange to say, negative, not only to bromine but also to any evidence of kidney irritation.

COMMENT

A perusal of the case histories will demonstrate the following facts: Patient 1 did not react to ordinary treatment for eight weeks, yet after two or three weeks of saline injections was nearly half well. Patient 2 developed extensive bromoderma after only eight days of moderate dosage with the bromides Patient 3 showed a marked reaction after the first injection, and a more rapid improvement than did the other two after the reaction had subsided.

Physiologic sodium chloride solution was used in most of the injections. Bromoderma is usually very obstinate to the treatment heretofore used; this is particularly true of the condylomaform type. The results obtained in this disease with such a simple remedy as saline solution seem, from the few cases noted, to be sufficiently encouraging to warrant further and more extensive use in the future, thereby determining its real value In the opinion of Stevenson,[10] with which I unqualifiedly concur, the only apparent contraindication to its use is the presence of nephritis, for the apparent increased elimination of bromine following its displacement by chloride would undoubtedly aggravate an existing kidney irritation.

30 East Fortieth Street.

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS [*]

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(Continued from page 245)

INTRAMUSCULAR INJECTION

Depositing the injected material into muscular tissue or between layers of muscles (epifascial injection) has the advantage of more rapid absorption and less liability to abscess formation or necrosis from the introduction of irritant material. It has the disadvantage—and for the same reason—of greater liability of an accidental intravenous injection This would not only give a suddenness and intensity of action that may be alarming, even dangerous, but also, when protein precipitant, insoluble or oily material is injected, the liability to the formation of pulmonary emboli, which may be manifested by dyspnea, cough, and even a rise in temperature Though, as a rule, these results are not serious, they should be guarded against by proper technic.

Intramuscular injection is the method of choice for the administration of diphtheria and tetanus antitoxin, to secure prompter absorption, and of the insoluble mercurial and bismuth preparations, emetine, etc., on account of their irritant nature. To infants and others with whom intravenous injection presents special difficulties, intramuscular injections of neo-arsphenamine and of soluble mercurials may have to be given, though a certain amount of soreness is likely to follow.

The essential points by which intramuscular injection differs from the subcutaneous is in the use of a longer needle (from 1½ to 2½ inches, according to the thickness of the subcutaneous tissues) so as to reach the muscle layers, and a stronger needle, 22 gage, so as to lessen the danger of the needle being broken off while in the tissue The needle must be in good condition. The skin, instead of being picked up in a fold, is stretched, the needle is inserted more or less perpendicularly, and it is necessary to aspirate for at least ten seconds before injecting to make sure that the point of the needle is not in a vein. If blood is aspirated, the needle should be withdrawn and reinserted a little distance from the previous place of puncture.

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[10] Stevenson James Sodium Chloride in the Treatment of Bromism, Arch Dermat & Syph **12**: 525 (Oct) 1925

[*] This is the thirty first of a series of articles on "The Technic of Medication" When completed, the articles will be assembled in book form

The site of election for these injections is the buttock. To avoid striking bone or depositing irritant material on the periosteum or near the roots of the sacral plexus, which may give rise to induration, pain, even obstinate sciatica, the buttock is divided into approximately equal quadrants by a horizontal and a vertical line. The injection is given in the upper outer quadrant near the intersection of the two lines. The patient should lie prone on the table, the feet toeing in. In this manner may be antagonized the dimpling of the buttock, denoting muscular tension, so common in patients who, fearing the introduction of the needle, keep their heels pressed together. Muscular rigidity renders the injection more difficult, and is liable to force medicament back along the track of the needle, resulting in leakage of the injected material, and in subcutaneous irritation and induration. To avoid this further, one should wipe the needle free from the material to be injected, and, while introducing the syringe through the tissues, maintain pressure with the index finger against the piston just along the barrel, so as to keep the piston from descending and squirting some of the fluid into the areolar and fatty tissues. To lessen liability to after-leakage into these tissues, it is desirable to shift the skin over the muscles just before the puncture by placing "the left hand flat on the buttock and with moderate pressure drawing it firmly downward toward the patient's heel"; and "the needle should be introduced at an angle of approximately 20 degrees from the vertical in a sagittal plane, with a slight inclination inward." [86] It is advisable to have a small air bubble in the syringe above the injection fluid to clear the needle of it.[87] As the needle is swiftly withdrawn, the left hand quickly pushes the tissues that had been drawn downward back to their normal position, and maintains pressure for a little while.

Stokes [86] aims to inject, especially when larger quantities of fluid (100 cc. or more) are to be given, but also at other times, in the areolar tissue on the upper surface of the fascia forming the extension of the fascia lata covering the gluteus maximus, as first advocated by Wechselmann and Eiche in 1914. Not only is better absorption obtained, but there is a much greater freedom from local irritation even on the injection of a highly irritating drug when this "epifascial" technic is carried out, than when the material is injected between the fasciculi of the muscle. Thus, Stokes and Behn [87] have administered sulpharsphenamine in doses ranging from 0.3 to 0.6 Gm. given in 30 or 40 per cent solution without any local discomfort whatever in 83 per cent of 1,360 injections; and with results quite as satisfactory therapeutically as from arsphenamine or neo-arsphenamine administered intravenously. This is accomplished by introduction to its full length of a needle properly adapted to the type of the buttock, and injecting only when the flow of a material is free and easy and the needle point does not "feel" as if stuck in a board. Gentle massage with a cotton pledget results in a rapid flattening out of the injection mass in the areolar tissue over the fascia, favors absorption, and lessens after-leakage. "A little experience," says Stokes, "soon enables one to control the technic by recognizing the deep, painful lemon or orange sized induration that has followed on too deep injection (intramuscular) and the hazel-nut to hickory-nut sized nodule in the skin or panniculus secondary to too superficial injection or to leakage along the needle track."

For children, as in the administration of diphtheria antitoxin, the outer surface of the thigh is advocated,[88] the material to be injected into [or better perhaps below] the vastus externus muscle. This is probably the least sensitive part of the skin; and, as the child does not have to lie on it, injection here causes less subsequent restlessness. The authors also believe that the pressure of the compact thigh muscles favors more rapid absorption.

Concentrated solutions or suspensions requiring small amounts for each injection are often less painful than more dilute preparations that have to be given in greater volume. To avoid uneven distribution of suspended material with resulting inequality of dosage, and the rapid deposition of the undiluted irritant material on the muscle after injection, denser mediums than oil are being advocated, such as fats of higher melting point or an emulsion of almond oil made with anhydrous wool fat (20 per cent) and water (5 per cent), by Nitardy.[89] To lessen pain, addition of a small amount of a local anesthetic, as of procaine hydrochloride, has been suggested, which, however, is of no use against the pain and soreness that may follow for several days after the injection.

The slowness of absorption of the insoluble materials, even on intramuscular injection, must be borne in mind. They may be absorbed at a rate of little over 1 per cent,[90] so that, if injections are given even at the usual weekly intervals, accumulation of drug in the tissue must invariably occur. This will, however, secure a very prolonged action, which may be kept harmless, provided a total maximum safe dose is not exceeded.

Should painful indurations or nodules appear, rest and hot applications, and later painting the overlying skin with tincture of iodine, and the application of gentle massage are useful. If fluctuation appears, aspiration may suffice to take care of the usually sterile abscess.

The most unpleasant complication of intramuscular injection is the breaking of a needle while in the tissue. This may be due to striking bone, a sudden movement of the patient, or a weak point in the needle. To avoid this occurrence, only the finest type of steel and tempered gold needles should be employed for intramuscular work, to be renewed often enough to secure good condition. If one is in doubt as to the integrity of the needle, a forcible attempt should be made to bend the shaft on the hub. To avoid sudden movement, cooperation of the patient must be secured or, in case of children, motion carefully guarded against. The correct point of puncture will obviate striking bone.

If a needle breaks, Stokes [86] suggests not to exclaim or to discuss the situation with patient or nurse, but to keep the left hand in position until an attempt has been made to recover the needle. The usual point of fracture is at the juncture of the hub and shaft; and, with an assistant at hand, the fragment just beneath the skin may sometimes be recovered by a small incision and with the aid of a hemostat, if the operator keeps his presence of mind. If this is not done, the moment the left hand is released from the buttock the needle is lost and can usually be identified only by the roentgen ray and removed through an extensive surgical incision.

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[86] Stokes, J. H.: A Technic of Intramuscular (Epifascial) Injection, M. Record **99**:720 (April 30) 1921.

[87] Stokes, J. H., and Behn, C. W.: Serologic and Clinical Results in Various Types of Syphilis, J. A. M. A. **83**:242 (July 26) 1924.

[88] Rolleston, J. D., and MacLeod, C.: Intramuscular Injection of Antitoxin in the Treatment of Diphtheria, Brit. J. Child. Dis. **11**, July, 1914.

[89] Nitardy, F. W.: Notes on Suspension of Solids in Liquids, J. Am. Pharm. A., November, 1919, p. 961.

[90] Schamberg, J. F.; Kolmer, J. A., and Raiziss, G. W.: Comparative Toxicity of Various Preparations of Mercury, J. Cutan. Dis. **33**, December, 1915.

Injections for Topical Action.—Medicaments may be deposited for topical action in the parenchyma of glands, tumors (intraparenchymatous injection) and near nerve trunks (perineural injection), by a technic like that of intramuscular injection. The needle attached to the syringe, filled with fluid by holding its point upward and pressing on the piston until the first drop appears at the end, is inserted directly into the organ it is desired to reach. The piston of the syringe is then pulled on to see whether blood flows from the needle. If this occurs, it means that the point of the needle is engaged in a vessel and must therefore be withdrawn. If no blood flows, one may proceed with the injection.

When injection into serous cavities is aimed at, for instance, in the obliteration of hydrocele by the introduction of irritants, the needle, without being attached to the syringe, is inserted into the serous cavity. That the point of the needle is in the proper place is indicated by the appearance of the serous fluid at the open end of the needle. Then the syringe is attached to the needle, care being taken not to introduce any air, and the injection is accomplished.

INTRAVENOUS INJECTION

As with hypodermic injection, we may here also distinguish between the introduction into veins of small quantities of fluid—vein injection, proper—and of large quantities—vein infusion, sometimes merely spoken of as "infusion." From the standpoint of technic, it might be permissible to consider vein injection to include the intravenous introduction of fluid by means of a syringe, which practically limits the quantity up to 10 cc., certainly not exceeding 20 cc. When larger quantities of fluid are to be injected, the infusion is carried on by means of the hydrostatic pressure of a "gravity apparatus" or by air pressure.

It is a curious fact that vein injection was discovered and practiced earlier than hypodermic injection. If we discount the more or less mythical and apocryphal references to blood transfusion in ancient literature, the suggestion to introduce blood or medicaments into veins did not formulate itself definitely in man's mind until after Harvey (1613) demonstrated the circulation of the blood. The credit for being the first actually to inject drugs intravenously in animals belongs to the architect and professor of astronomy, Christopher Wren,[91] who in 1656 injected dogs with drugs by means of a quill attached to a small bladder. After that intravenous injection was practiced occasionally and rather exceptionally until 1910, when Paul Ehrlich, with the introduction of arsphenamine, which must be given intravenously to obtain the best results, made intravenous injection a matter of everyday practice. The surprising ease and relative immunity, once one has mastered the fairly simple technic, with which these injections may be given, having been discovered, an increasing number of drugs has been administered in this manner, until at present we are in an era of unnecessary and indiscriminate use of a method that is not devoid of risks.

Technic of Vein Injection.—The median cephalic veins at the bend of the elbow are the vessels of choice. If these for some reason are not available, the median basilic vein may be chosen (there is danger of wounding the brachial artery just below it), or a vein of the dorsum of the foot or the back of the hand, or the external jugular vein. In the infant, the superior longitudinal sinus[92] may be the only vein that can readily be punctured. Injection into varicose veins is not recommended, as these are prone to subsequent thrombosis, but may be resorted to exceptionally in obese persons in whom other veins may be quite inaccessible. It might be noted here, in passing, that intravenous injection of from 0.5 to 1 cc. of 0.5 to 1 per cent mercuric chloride solution has been practiced successfully for the purpose of obliterating varicose veins by means of thrombosis even in ambulant patients.[93]

The vein is made as prominent as possible by compression above the site of puncture. For the compression, a rubber band 1½ inches wide and 24 inches long (made from red rubber inner tubing) tied into a bow knot may be used; or else a rather wide rubber tube held together where it crosses, by means of a hemostat. Forsbeck[94] described a running bow line tourniquet, obtained by sewing a 2 or 3 inch loop in one end of a rubber tube. The open end is slipped through the loop, traction is exerted on both ends, and the loop is pushed down against the arm and released. It will hold firmly. Steady pressure against the loop with the thumb will loosen the tourniquet. The arm band of a blood pressure apparatus may be used to good advantage. In emergency, one may use a large handkerchief or a small towel folded into a bandage, the ends so knotted or twisted together that they may be readily loosened. The compression bandage must be loosened in such a way as not to jar the arm and perchance displace the needle. This is best done by an assistant; but it may be accomplished by the operator himself. If the vein does not become sufficiently prominent by constriction above, a dependent posture of the arm for a minute or two, having the patient close and open the fist for a few times, preliminary hot applications, stroking of the forearm toward the elbow, or applying an Esmarch bandage or other constriction from the wrist to near the elbow are maneuvers that usually suffice. It is important that the forearm rest on a firm support, so that it may be kept perfectly immobile. The arm should be overextended by means of a pad under the elbow, so as to force the vein nearer the surface. It is preferable, though not absolutely necessary, that the patient be recumbent.

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[91] Cited by Macht, D. I.: The History of Intravenous and Subcutaneous Administration of Drugs, J. A. M. A. 66:856 (March 18) 1916.

[92] The technic of sinus puncture is as follows: The superior longitudinal sinus is entered at the posterior angle of the anterior fontanel, as here the sinus is wider and deeper. The bevel of the *no.* 26 needle to be used must be very short (2 mm.), as a long pointed needle might puncture the inner wall before the entire opening of the needle is through the pericranium. The needle is held at an angle of about 50 degrees with the plane of the anterior fontanel; it is inserted just in its center, the point directed backward. As soon as the needle has penetrated the skin, the piston is pulled on so that the suction may cause the blood to rush into the syringe the moment the sinus is entered. To push the needle through the firm pericranium, considerable force is required. The moment this resistance has been overcome, blood should enter the syringe, as the sinus lies immediately below the pericranium. If it does not, the needle has gone too far, and should be carefully withdrawn until blood appears in the syringe.

[93] Linser: Med. Klin. **17**:48 (Nov. 27) 1921. Fischer, Carl: Wien. klin. Wchnschr. **35**:11 (Jan. 6) 1921.

[94] Forsbeck, F. C.: Running Bow Line Tourniquet, J. A. M. A. **85**:974 (Sept. 26) 1925.

For disinfection of the skin, alcohol, preceded by soap and water, is preferred to tincture of iodine application, as the latter discolors the skin and renders the vein less visible. Needle and syringe may be boiled in water, or disinfected with alcohol.

An all glass 10 cc. syringe, preferably but not necessarily with an eccentric tip, is the single most important syringe for intravenous injection. This should be fitted with a 1½ inch 20 gage needle, preferably of tempered gold or platinum. The bevel of the needle point should be medium and straight,[95] not long and bladelike, short and flat or concave. If the vein is very small or quite movable or the skin tough, a smaller steel needle should be employed, a 22 to 24 gage (not smaller than 26 gage), from ½ to 1 inch long.

The vein should be kept from moving out of the way of the needle by downward pressure of the index finger of the left hand. The syringe, from which all air has been expelled, is held between the palmar surface of the fingers and the thumb. The needle, bevel up, is placed over the vein parallel to it, and at as acute an angle with it as possible. It is best to approach the vein laterally: for, when it is entered from above, the pressure is more likely to flatten the vein and lessen its distention. The needle is forced through the skin with a lifting motion, when a sudden cessation of the resistance and the appearance of a thin stream of blood in the syringe may indicate that the vein has been entered. If these signs do not appear, gentle downward pressure, while the needle is brought to practically a horizontal position and in line with the long axis of the vein, will make the needle enter the vein. Care should be exercised not to be so forceful in this movement as to transfix the distal wall of the vein as well. As soon as the needle has entered the vein, it is pushed perhaps one-third its length up the vein. The tension on the skin may then be relaxed. The piston of the syringe is now gently pulled on to make sure, by aspiration of blood, that the syringe is still in the vein, whereupon the injection may proceed. In general, the more slowly the fluid is injected the better, not more than 1 cc. per minute, and to do this it is advised to push the piston down with a screwing motion, turning it round and round, as in this manner the speed of the injection may be more accurately controlled. The injection should, of course, not be commenced until the constriction has been released, unless the quantity to be injected does not exceed 1 or 2 cc., when the constriction need not be removed until after the injection. To avoid escape around the vein of a few drops of irritant injection fluid, it is advisable to aspirate a little blood into the syringe before withdrawing the needle.

After the injection, pressure is immediately exerted on the point of the puncture for a few minutes by means of a sterile piece of gauze. Sealing the puncture with collodion or an adhesive plaster bandage is rarely required. It is well to have the patient rest in the reclining posture for at least an hour after a vein injection, if possible with the physician near at hand.

If a swelling should appear round the vein during the injection, indicating paravenous injection, further introduction of the fluid should cease at once, and the piston be pulled on to aspirate as much of the fluid around the vein as possible. A cold compress should then be applied.

Vein Infusion.—This is practiced by means of a graduated irrigator, or a funnel in an emergency, a 1½ yard piece of rubber tubing, a needle, and a connecting piece or adapter. While any needle may be used, a special needle bent at an angle and provided with a thumb and finger rest for greater convenience in handling, such as the Schreiber needle, is preferable. Local anesthesia may be employed, if desired, by infiltration of a drop or two of 2 per cent procaine hydrochloride solution. Stokes[96] describes the Schreiber technic as follows:

> The Schreiber needle is held like a pen, steadied by two fingers instead of one. Pressure is brought to bear on the patient's arm by the operator's right hand, while his left maintains tension of the skin. The right hand should relax a little and the needle be guided by thumb and forefinger rather than forced up the vein. The needle should be run up the vein as is done when the syringe is used. The movements of the needle in entering suggest those of vertical penmanship, and are accomplished by depressing the knuckles, keeping the wrist fixed rather than by moving the hand. The needle is free from the injecting apparatus before being introduced; and, after an uninterrupted flow of blood is assured, the operator uses his left hand to adjust the adapter, and can now begin the injection. Once this is begun, the operator should not release the needle or remove his right hand, if the vein has proved at all difficult to enter. While the Schreiber needle is being withdrawn, pressure should be made by the assistant just above the needle, and this, together with the precaution of shutting off the stream of injection fluid just back of the adapter and not higher up in the tube, as is usually done, will prevent any leakage.

A gravity apparatus for the slow intravenous administration of accurately measured quantities is described by Thalhimer.[97] By means of a Y tube and rubber tubing, a graduated buret is connected with the irrigator in such a way that the fluid is at the same level in the two. After the needle is inserted into the vein, the rubber tube from the irrigator is closed and the stopcock at the main outflow tube is gradually turned until the solution begins to flow very slowly from the buret. It is easy by watching the fall of the fluid in the buret to determine with the second hand of a watch how long it takes for the delivery of 1 cc. of solution. Then the solution is permitted to flow from the irrigator, which it does at the same rate as it flowed from the buret. Glucose solution has been given intravenously with this apparatus as slowly as 40 cc. an hour, for five hours. As a solution that is being given slowly cools in the tube before it reaches the vein, it should be warmed, as by an ordinary electric pad placed round the portion of the tube nearest the vein. A collodion seal and a strip of adhesive plaster serve to immobilize the needle.

G. A. Hendon,[98] having found needles unsatisfactory for prolonged vein infusion, as in connection with intravenous nutrition, advocates exposure of the vein and insertion of a cannula. He has devised for this purpose a cannula that has an obturator, two lateral openings and two shoulders, one over which the vein may be cuffed to hold it in position, and the other to fit beneath the suture line in the skin and add to the security of its position. The end is blind to prevent plugging and slightly beveled to admit of ready penetration through a slight nick in the vein, but not sharp pointed so that penetration of the opposite vein wall is avoided. The vein having been exposed under local anesthesia, the cannula is introduced beyond the first shoulder, with the obturator in place, and the vein is tied above the shoulder with catgut. The obturator is then removed, to make certain that the cannula is inside the vein; if it is, the blood will flow freely. The obturator is then replaced and the skin sutured over the second shoulder. In the meantime a sterile vacuum bottle has been filled with the fluid at the proper temperature and joined by a 10 inch length of rubber tubing to a glass bulb, like those sometimes used in proctoclysis, to render the drip visible. The rubber tubing at the other end of the glass bulb ends in a glass irrigating nozzle to which a section of rubber catheter from 6 to 8 inches long is attached to connect with the exposed end of the cannula. A convenient clamp is placed on the tube near the bottle and so adjusted as to regulate the rapidity of flow by turning a screw. The air in the tubing should be expelled by allowing the liquid to flow before connecting with the vein. After the connections are all made, the solution is turned on and allowed to run in a steady stream for a few seconds to give it impulse, after which, by tightening the clamp, the rate can be regulated to whatever speed is desired. Sixty drops per minute has appeared to be the most favorable rate. The next step is to secure the attachments so that the movements of the patient will not loosen them or cause any pull on the cannula. The tubing, including the glass nozzle, is laid along the forearm, to which it is secured by encircling the arm with strips of adhesive plaster about 1 inch wide and 2 or 3 inches apart. A gauze dressing is placed over the incision and a padded splint extending from the shoulder to the finger tips is bound with bandages to the posterior aspect of the extended arm, to prevent involuntary movements, especially flexion of the elbow. The bottle containing the fluid is hung on a stand at a convenient height and distance from the bedside. By means of this technic, giving 60 drops per minute or approximately 240 cc. per hour, Hendon has maintained administration of dextrose solution for 192 hours, or eight days and nights, actually delivering about 6,000 cc. to the circulation in the twenty-four hours.

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[95] Steel, W. A.: M. J. & Record **121:** 26 (Jan. 7) 1925.

[96] Quoted from Dutton, W. F.: Intravenous Therapy, Philadelphia, F. A. Davis Company, 1925, p. 148.

[97] Thalhimer, William: A Simple Apparatus for Intravenous Administration of Glucose Solutions, J. A. M. A. **78:** 190 (Jan. 21) 1922.

[98] Hendon, G. A.: Venoclysis or Intravenous Nutrition, Texas State J. Med. **21:** 662 (March) 1926.

Air pressure may be employed instead of hydrostatic pressure, as shown by an apparatus described by Burke.[99] It consists of a 250 cc. Erlenmeyer flask fitted by means of a perforated rubber stopper with two bent tubes, a short one and a long one. The short tube is connected by a piece of rubber tubing, about 18 inches long, to a compression bulb taken from a blood pressure apparatus. The long tube is connected by a piece of rubber tubing about 30 inches long to the side extension of a Kaufman-Luer syringe. A piece of glass tubing is inserted into this line about 8 inches from its distal end. To withstand the air pressure, all joints are reinforced by a piece of light copper wire, some of which is also twisted round the neck of the flask, one end left long so it can be bent over the rubber stopper and fastened to prevent it from coming out when pressure is applied. It is also necessary to encircle the piston of the syringe with a piece of wire, as the clip that comes with the syringe will not stand the pressure.

The Kaufman-Luer syringe, mentioned above, which may also be used with a gravity injection apparatus, has an opening on the side one-half inch back of the needle, where the solution enters. It has the advantage that it indicates definitely when a vein has been entered; for, if blood does not show when the piston is pulled back, one knows that a vein has not been punctured. When blood shows, one starts the flow of solution by drawing the piston back past the side opening. Another advantage of this syringe is that it is light and is easily handled. The flow of solution may be stopped by merely pushing the piston past the side opening.

The rate of flow in vein infusion should not exceed 500 cc. in ten minutes for physiologic sodium chloride solution, and should be still slower if the heart's action is enfeebled. It should also be much slower if an active chemical agent is injected. The total amount may range up to 500 and even much more, if it is given slowly enough and the need of the system is sufficiently great. In cases of shock, collapse or profound circulatory weakness, the operator should be guided by return of the pulse or improvement in its quality and the general condition of the patient, and should stop as soon as moderate amelioration has been attained; for it has happened that a patient, who was improving when 500 cc. had been infused, died by the time 1,000 cc. had been given.

The temperature of a solution to be given by vein infusion should be a few degrees above that of the normal blood, at about 105 F. If the stimulating effect of heat is desired, the temperature should range from 115 to 118 F. As the fluid cools during its passage through the tubing, the fluid in the reservoir should be kept about 1 degree F. higher for each foot of rubber tubing. In prolonged infusion, every effort should be made to maintain the desired temperature as constantly as possible throughout the administration, by the addition of hot fluid from time to time, by means of an electric heating pad, or by immersing a few coils of the rubber tubing in water at the desired temperature, or most conveniently by the use of a vacuum bottle.

(To be continued)

Sterilizable Dialyzing Membrane.—Tests show that a new synthetic cellulose product (used principally for wrapping) for a sterilizable dialyzing membrane will probably make practical a whole field of bacteriology as yet hardly explored. Donna E. Kerr and Dr. H. W. Hill, director of the Vancouver General Hospital Laboratories, made these tests, which are described in part in the *Vancouver Medical Association Bulletin* for February: "In searching for a sterilizable dialyzing membrane, a suggestion came from the Christmas boxes of candy wrapped in glistening sheets of 'paper.' The resemblance of this material to thin sheets of collodion induced me to try its dialyzing powers, which, for silver nitrate, sodium chloride and glucose, proved perfect. The next step was to test its resistance to sterilization. Fifteen pounds of steam for twenty minutes in an ordinary laboratory autoclave left it unchanged in appearance, feel, etc. Its dialyzing powers were still unaffected. The various uses of such a membrane in physics, chemistry, and especially in bacteriology and biology, both scientific and applied, are obvious and need not be enlarged on here. With any household cement, sheets of it may be made into tubes, flat, square or round bags, etc. Diaphragms of it may be cemented across bowls, beakers or glass tubes. So far as we have been able to discover, this material, known as cellophane, has not been previously advocated as a sterilizable dialyzing membrane."

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[99] Burke, J. G.: An Air Pressure Method of Administering Arsphenamine, J. A. M. A. 77:2057 (Dec. 24) 1921.

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SATURDAY, JULY 31, 1926

NARCOTIC CONTROL IN GREAT BRITAIN

Action has been taken in Great Britain to strengthen narcotic control. The regulations governing the manufacture, sale and professional use of narcotics are to be extended and reenforced, and they are to be made applicable to barbital (veronal) and other derivatives of barbituric acid. This is the result in part of an inquiry into the prevalence of morphine and heroin addiction by a Departmental Committee on Morphine and Heroin Addiction and in part of general agitation concerning the indiscriminate sale of barbital and similar drugs.

Morphine and heroin addiction are rare in Great Britain, according to the evidence collected by the committee. They have become less prevalent during recent years, according to the weight of the testimony, most witnesses attributing the decline to the Dangerous Drugs Acts, which have made it harder to get the drugs except from or through physicians. These acts, and the regulations made to carry them into effect, seem to proceed along lines somewhat different from those followed by similar legislation in the United States; for according to Sir William Willcox—

> In the difficult position created by the Dangerous Drugs Regulations it must be borne in mind that the object for which they were framed can only be satisfactorily attained by the loyal cooperation of the professions concerned with the State authorities. Drug addiction, to quote the words of the Departmental Committee on Morphine and Heroin, should with few exceptions be regarded as a manifestation of a morbid state, and not as a mere form of vicious indulgence. It is in this spirit that the Regulations in this country have been framed. They contrast favourably with the Regulations in America and some other countries where drug addicts are regarded as wilfully vicious persons, and are notified to the authorities before drugs can be supplied to them. Doctors even have to obtain a special license to prescribe the dangerous drugs.[1]

For the purposes of its report, the committee defined the term "addict" as meaning "a person who, not requiring the continued use of a drug for the relief of the symptoms of organic disease, has acquired, as a result of repeated administration, an overpowering desire for its continuance, and in whom withdrawal of the drug leads to definite symptoms of mental or physical distress or disorder."[2]

Addiction to morphine and heroin is, with few exceptions, a manifestation of a morbid state; the drug is taken not to obtain positive pleasure, but to relieve a morbid and overpowering craving. The only immediate cause of addiction, however, the committee admits, is the use of the drug for a sufficient time to produce the constitutional condition that manifests itself in the overpowering craving and the occurrence of withdrawal symptoms when use is discontinued. The incurability of some addicts under modes of treatment that are open to them and the probable incurability of some under even the most thorough treatment is admitted by the committee. Incurability of such addicts is postulated on the fact that complete withdrawal produces serious symptoms which cannot be satisfactorily treated under ordinary conditions of private practice or on the fact that the addict is capable of leading a fairly normal life so long as he takes a certain nonprogressive quantity, usually small, of the drug of addiction, but ceases to be able to do so when the regular allowance is withdrawn. The indefinitely prolonged administration of morphine or heroin to such addicts the committee regards as legitimate medical treatment, but a physician should not assume responsibility for the continuous administration of the drug in any such case until after one or more consultants have approved that course.

Since "abrupt" or even "rapid" withdrawal of morphine or heroin cannot be carried out safely except under conditions usually found only in special institutions or nursing homes, the British committee concluded that gradual withdrawal will be with rare exceptions the only practicable method of treatment under the ordinary conditions of private practice. Institutional treatment affords the greatest hope of cure even when gradual withdrawal is attempted and is with rare exceptions indispensable to treatment involving abrupt withdrawal. Permanent cure requires a long period of care after the patient has become for the time being independent of the drug. His will power must be educated and his mental outlook changed. Conditions that brought about addiction in the first instance must be removed if practicable, and the possibility of improving the patient's social condition must be considered. A lasting cure cannot be claimed unless the patient has remained free from his craving for from one and a half to three years after the final withdrawal of the drug. Even the most optimistic observers who appeared before the committee, except two, did not claim more than from 15 to 20 per cent of such cures. Relapse sooner or later, according to the committee, appears to be the rule; permanent cure is the exception.

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[1] Lancet 1: 1071-1073 (May 29) 1926.

[2] Report of Departmental Committee on Morphine and Heroin Addiction, London, 1926, p. 9.

To limit the danger of the development of narcotic addiction in cases in which narcotic drugs must be used, the committee advises the physician not to inform his patient of the name or the dose of the drug administered and to order only so much of the drug as will last until his next visit. Hypodermic injections should be the last resort, if the danger of addiction is to be kept at a minimum, and under no circumstances should a patient be allowed to administer a narcotic drug to himself hypodermically. A physician asked by a patient not previously under his care to prescribe or administer morphine or heroin is advised by the committee not to supply the drug in any quantity whatever unless satisfied as to the urgency of the situation, and in no case to administer or order more than is immediately necessary. If no organic disease can be found to justify the further prescribing or administering of the drug, it should be withheld until after the physician has obtained the patient's clinical history from his previous medical attendant. The committee suggests the possible value of judicious instruction of medical students in the precautions necessary to avoid creating addiction in the course of medical treatment.

The report of the committee contains no reference to the possible advisability of steps looking toward the withdrawal of heroin from the market, such as have been taken in the United States. Willcox, however, in addressing a conjoint meeting of the Southwest London Medical Society and the Southwest London Chemists' Association, May 5, opposed such action, believing that heroin has therapeutic properties not possessed by morphine or other drugs. It is, he said, more effectual than they for the relief of severe nerve pain; it does not cause constipation, and in some cases in which morphine is not tolerated, causing vomiting or excitement, heroin acts as a perfect hypnotic. The danger of addiction, however, must never be forgotten.[1]

Any action looking toward the inclusion of codein among the drugs covered by the Dangerous Drugs Acts Willcox thought unnecessary. He did not regard it as a dangerous drug, it is almost always taken by the mouth, not hypodermically, and in the course of an extensive toxicologic experience he had never met a case of codein addiction. The addition of codein to the list would greatly restrict the use of a valuable remedy and would cause endless inconvenience and hardship. The Departmental Committee took no notice of codein except such as is implied in the statement in its report that there is little, if any, abuse or danger of addiction arising from preparations at present excluded from the scope of the Dangerous Drugs Acts, with the possible exception of chlorodyne—codein being in fact one of the excluded drugs.

Quite apart from the activities of the Departmental Committee on Morphine and Heroin Addiction, the Home Secretary has taken action to include among the drugs within the purview of the Dangerous Drugs Acts diethylbarbituric acid and other alkyl, aryl or metallic derivatives of barbituric acid, whether described as veronal, proponal, medinal, dial, or any other trade name, mark, or designation, and any preparation, admixture or other *substance containing any of them.* None of these drugs is to be supplied at retail, except (*a*) to a duly qualified practitioner, (*b*) for use in hospitals or similar public institutions, (*c*) to persons authorized by the Secretary of State, or (*d*) on or in accordance with a prescription given by a duly qualified medical practitioner. A prescription must be dated and signed by the practitioner and bear his address, and must show the name and address of the patient for whom the drug is ordered. These drugs are not to be supplied more than once on the same prescription, except that the prescribing physician may on one prescription direct that the drug be supplied not oftener than three times. Physicians who dispense such drugs must keep records of such as they dispense. As the basis for the promulgation of regulations to restrict the sale of barbital and related drugs, the Home Office experts produced copious evidence of deaths caused by them, particularly by barbital—sometimes suicidal, but perhaps more frequently from accidental overdoses taken for sleeplessness. London experience, it was stated, showed that in this respect barbital was the most dangerous drug in the Pharmacopeia.[3]

THE BEHAVIOR OF THE PYLORUS

The physiologist thinks of the pylorus primarily as a barrier marking the boundary between the seat of digestion in an acid medium and a region enriched with alkaline secretions, apparently subject to delicate control mechanisms of some sort. To the clinician it is a region frequently the seat of neoplasms and other structural as well as functional abnormalities. Pyloric obstruction and pylorospasm are common phenomena of medical interest and remedial concern. The fact that the pylorus is not continually patent is the starting point for theories of its function. It has repeatedly been noted in THE JOURNAL[4] that the long acclaimed acid control of the sphincter is not tenable in the light of accumulating evidence. In essence the theory postulates, first, that the discharge of foodstuffs is "occasional," and, secondly, that this irregularity is determined by the time necessary for the acid to reach the proper reaction on the gastric side to open the pylorus, and then by the time necessary to neutralize the acid when it has reached the duodenum. It is currently concluded from roentgen-ray evidence in animals and in man, and from experimental evidence in animals, that the pylorus is normally open at the height of antral contraction, and that every antral contraction is normally followed by the discharge of chyme through the pylorus. It now seems probable that acid on the duodenal side is just as unnecessary for the mechanism of emptying the stomach as it is on the gastric side. Summarizing the effects of chemical factors, Klein [5] concludes that the presence of acid on the gastric side is not necessary for the opening of the pylorus. Normal concentrations of acid on the duodenal side do not keep the pylorus closed. Concentrations of acid higher than normal in the stomach cause a slowing of gastric peristalsis, and while this is especially notable in concentrated experimental solutions, it is, however, also noticeable within the limits found in hyperchlorhydria. Very strong acids cause a complete inhibition of peristalsis, and even reverse peristalsis and vomiting. The site of origin for this reflex is the duodenum.

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[3] Brit. M. J. 1:875 (May 22) 1926.

[4] The Control of the Pylorus, editorial, J. A. M. A. 75:1648 (Dec. 11) 1920; The Motility of the Pyloric Sphincter, ibid. 76:729 (March 12) 1921; The Pyloric Sphincter and Duodenal Motility, ibid. 78:1205 (April 22) 1922; The Acid Reflex of the Pylorus, ibid. 82:1784 (May 31) 1924.

The failure of the theory of acid control to afford a satisfactory explanation of the ordinary behavior of the pylorus during alimentation inevitably directs attention to the mechanical factors that may play a directive part. Klein believes that a better understanding may be secured by revising our conception of ordinary pyloric closure. He remarks that the latter is in reality ordinarily due to a state of tone that the pylorus, relaxed during gastric rest, assumes after the entrance of food into the stomach. Of course, Klein adds, if a circular ring of muscle becomes moderately tonic, and there is nothing within its lumen, its margins will be in contact. In that sense the pylorus may be said to be closed. But normally that state of tone is less than the pressure to which the fluid contents of the antrum are subjected by the advancing peristaltic wave. And so this wave during its progress through the antrum partially overcomes the closure and forces chyme in a continuous stream through the ringlike opening of the pylorus. The size of this ring will depend on the amount of tone of the pylorus on the one hand, and on the pressure created by the peristalsis on the other. During the larger part of the gastric cycle, then, the pylorus is open, and chyme is being forced through it. It is difficult to say where the tone stimulus to the pylorus arises, but it seems probable that it usually comes after some of the fluid has been passed into the duodenum.

In the light of the investigations [5] at the Columbia University College of Physicians and Surgeons, fluidity of the chyme in the antrum is the factor of prime importance for its expression. Solid bodies that by chance get into the antrum are carried back into the body by retrograde peristalsis. Each advancing peristaltic wave overcomes the tone of the pylorus and forces some of the chyme into the duodenum, regardless of whether the reaction of the chyme is neutral, acid or alkaline. Firm, decisive closure of the pylorus occurs at the termination of each peristaltic wave when the latter has reached the sphincter and after it has forced the chyme into the duodenum, regardless of whether the reaction of the chyme is neutral, acid or alkaline. Firm, decisive closure of the pylorus occurs at the termination of each peristaltic wave when the latter has reached the sphincter and after it has forced the chyme into the duodenum. It effectually prevents any regurgitation. Studies on the pylorus, as Klein asserts, must distinguish between the effects due to each of these two distinct phases: first, the tone of the sphincter, and, second, the gastric cycle consisting of the peristaltic wave and its culmination at the pylorus, producing the closure of that sphincter. In his opinion this conception is not open to the objections advanced against the other theories, and it is consistent with the known facts of gastric motility and digestion.

TRAINING HEALTH SPEAKERS

The obligation of the physician to aid in the medical and health education of the public is being more and more completely realized. Health talks and addresses constitute an effective means of disseminating useful information, provided they are properly prepared and effectively delivered. The demand from lay organizations for such health talks has grown tremendously. When a local organization, such as Kiwanis, Rotary, Lions' or similar clubs, the Y. M. C. A., chambers of commerce or women's clubs, is planning a program of speeches for its weekly or monthly meetings for the year, the committee of arrangements is likely to include one or more talks on health topics. In Kansas City, for example, there are more than 1,500 group meetings annually, including 122 lunch clubs meeting weekly, parent-teacher associations, fraternal societies, lodges and school assemblies. If only one health talk a year were given to each of these groups, it would require of fifty physicians thirty talks each to supply the demand. The physicians of that city have taken steps to fit themselves for this service. The Health Conservation Association of Kansas City, composed of eight volunteer medical organizations devoted to cancer control, tuberculosis, infant welfare, dental hygiene and other health movements, has appointed a publicity committee. Cooperating with the county medical society, it has organized the Kansas City Public Health Institute to provide instruction for physicians who desire to prepare themselves to give health talks to laymen.

A course of twelve lessons is being given, two evenings each week, consisting of lectures and talks by persons of experience in this work with the assistance of a teacher of public speaking. Seventy-five physicians have enrolled for the course, paying tuition fees to defray the expense. Doubtless some members of the class will find that they are not qualified to become effective speakers. Those who are found to possess talent for such service will find the course helpful in improving their ability.

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[5] Klein, Eugene: Gastric Motility, III, The Mechanism of the Pylorus, Arch. Surg. **12**: 1224 (June) 1926.

If the demand for health talks is to be met successfully, physicians must be able to speak effectively about medical and health matters, in language intelligible to a nonmedical audience. Timely topics of vital interest to the audience should be presented in a manner that will not alone impart information but also arouse hearers to active efforts for the betterment of health conditions both of the individual and of the community.

PHOSPHORUS IN THE BODY

In recent years the importance of the inorganic nutrients for the welfare of the body has been realized. Although it is easier to awaken popular enthusiasm for the scientific aspects of calories, proteins and vitamins in nutrition than of the mineral factors, much interest has lately been evinced with regard to the need and rôle of calcium, particularly during the years of growth and, in the female, during periods of pregnancy and lactation.[1] Judging by experiments on animals, the average man has about twenty times the body weight with which he was born and about 340 times as much calcium as did the body at birth. The mineral components of the body obviously cannot be synthesized like some of the organic constituents; they must be furnished in the food and drink and, furthermore, must be adequately absorbed. As the skeleton contains more than 95 per cent of the calcium of the body, failure of calcium utilization exhibits itself conspicuously in the bony structures. The modern study of rickets has thrown light on such facts and fixed attention on the bodily penalties of inadequate or improper calcium assimilation.

Phosphorus is perhaps even more widespread in the body than is calcium. The adult normally multiplies his original store of phosphorus by about 150. The speculations about the physiologic rôle of this element have been far more diffuse. One may read about phosphorus in relation to nerves and glands, blood and muscle; but after all the major consideration, from the quantitative standpoint, is the fact that phosphorus is a companion element to calcium in the calcium phosphate deposition in the bones. The recent studies of Sherman and Quinn[2] at Columbia University give further emphasis to the fact that the gains and losses of calcium and phosphorus in the body, while not arithmetically parallel, are nevertheless chemically interdependent. The calcium intake may be the limiting factor as regards the storage of both calcium and phosphorus in the organism. According to the New York investigators, the bearing and nursing of young cause a loss of body phosphorus coincident with that of body calcium but less pronounced in degree. The tendency to regain the mineral elements thus lost is also observable about proportionately for the two elements. It seems probable that these losses occur primarily because of the drain of lactation on the mother's body calcium, causing losses from the bones since there is little other available store of calcium in the body, and that the withdrawal of calcium phosphate from the bones to furnish material for milk production results in simultaneous losses of calcium and prosphorus in about the proportions in which they exist in the calcium phosphate of the bones.

It is thus established that paucity of calcium may become a "limiting factor" for the use of phosphorus. The converse of this, namely, that a deficiency of phosphorus in food may retard the deposition of calcium phosphate in the bones and thus the storage of both calcium and phosphorus by the body, and that in such case the addition of a phosphate to the diet will induce the increased storage of calcium as well as of phosphorus, has also been demonstrated. These two elements resemble Siamese twins in their mutually advantageous nutrient interrelationships. Fortunately, a diet adequate in calcium is in general likely to be satisfactory with respect to phosphorus. The reverse is by no means equally probable.

Current Comment

THE DE FOREST-BALDWIN "ADJUSTMENTS"

Chiropractors and osteopaths in their advertisements today are playing up a newspaper story regarding the alleged results of certain so-called research work done in the anatomic laboratory of the Ithaca Division of the Cornell University Medical College. It seems that Dr. Henry P. de Forest of New York City and Dr. Horace G. Baldwin of Tannersville, N. Y., were permitted to work in the laboratory just mentioned, because they desired to determine whether there was any anatomic basis that would explain the relief of certain symptoms which was said to follow manipulations which they performed. The de Forest-Baldwin thesis seems to be that a wide train of symptoms are caused by "sacro-iliac dislocation" and that manipulations that "reduce" this result in cure. No member of the staff of the medical college was engaged in the investigation, and according to the professor of anatomy at Cornell, neither Dr. de Forest nor Dr. Baldwin was able to demonstrate any anatomic basis that would explain either the alleged symptoms or the alleged results. Nevertheless, wide newspaper publicity has been given to the de Forest-Baldwin performances. According to these news articles, both of the men have successfully treated thousands of cases by their peculiar methods, and the conditions claimed to be susceptible of cure by these methods are diabetes, Raynaud's disease, sciatica, nervous prostration, neuritis, angina pectoris, etc. The medical profession might, charitably, have supposed that Drs. de Forest and Baldwin had been the victims of some overenthusiastic newspaper reporter, but a letter written by Dr. de Forest during the past few days makes such charitable excuses difficult of application. A woman, suffering from diabetes, who read the newspaper puffs of Drs. de Forest and Baldwin, wrote to the first-named physician about her case. Dr. de Forest answered in the following words:

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[1] Calcium Demands in Pregnancy, editorial, J. A. M. A. 81:834 (Sept. 8) 1923; The Calcium Factor in Tetany, ibid. 83:1081 (Oct. 4) 1924; Alimentary Factors Influencing Absorption of Calcium and Phosphorus, ibid. 83:1850 (Dec. 6) 1924; The Need of Calcium, ibid. 85:1065 (Oct. 3) 1925.

[2] Sherman, H. C., and Quinn, E. J.: The Phosphorus Content of the Body in Relation to Age, Growth and Food, J. Biol. Chem. 67:667 (March) 1926.

> Whether I have discovered a cure for diabetes or not is a debatable question. My medical friends for the most part do not agree with me. The patients, not a very large number it is true, but still enough to enable me to form an opinion, do not agree with my medical friends, for they are getting well, or have entirely recovered. Whether your condition is one that is amenable to this particular form of treatment I could not tell without a personal examination and an accurate diagnosis. This could only be secured by your coming to New York for the examination. If you decide to do this it must be by appointment, and it will be at least two weeks before I can fulfil my present engagements.

DOSE AND EFFECT

Many fluctuations in the ideas of maximum, minimum and optimum dosage are recorded in the history of medicine. Common sense in this regard has grown hand in hand with the development of scientific medicine, and both huge and infinitesimal doses have, for the most part, disappeared from practice. Recently Cameron[1] and Mackersie have experimented with products of internal secretion, indacontine, strychnine and nitrate ion. The results obtained indicate that although sufficiently large doses either cause toxic effects and death or are limited by rapid excretion, nevertheless, over a limited range, dosage bears mathematically demonstrable relation to effect. This work would seem to be a good answer, if an answer is needed among intelligent men, to the claims of drugless and near-drugless cults, sects and philosophies. Its scientific value rests in the equation which has been evolved, and by which it may be possible to standardize the dosages of different drugs and calculate the effects of different doses of a given drug.

SEYMOUR PLAN FOR DISEASE PREVENTION

At the conference of State and Provincial Authorities of North America held in Atlantic City in May, Dr. M. M. Seymour, deputy minister of public health of Saskatchewan and president of the conference, proposed a plan for "drives" against diphtheria, smallpox and typhoid. In brief, the scheme provides for devoting two months each during the coming year to diphtheria, smallpox and typhoid. Thus, during September and October a survey is to be made of the incidence of diphtheria, and everything possible done to educate the public concerning its nature. At the same time, immunization or vaccination of the individual will be encouraged. The plan proposed was adopted by the conference and, no doubt, will become effective with the month of September. Smallpox is to be the subject for November and December, and typhoid for January and February, 1927. The Seymour plan is obviously an attempt to apply to the prevention of disease the well established psychology of the "drive." Our public has been educated to "crowd action." In the organization, the press, the pulpit, the school and every other medium of education are to be employed. The prevention of communicable disease, even when the cause, the mode of transmission and the method of prevention are thoroughly known, is constantly obstructed by an apparently inevitable minimum of ignorance and carelessness. It may be that these factors can be overcome only by such an intensive drive as Dr. Seymour has proposed. The work will, of course, be carried on in every state and province of the United States and Canada as a separate activity of the local health authorities. Physicians will naturally cooperate in the fullest with any soundly established plan which their local authorities may initiate.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALASKA

Hospital Boat on the Yukon.—Dr. Curtis W. Welch, Nome, has been placed in charge of the hospital boat *Martha Angelina,* which was turned over by the Alaskan Railroad to the bureau of education, department of the interior, in order to provide medical relief to persons living in scattered communities along the Yukon River; two nurses also have been assigned to this work. The federal government has expended about $150,000 in the last year for the medical relief of native Alaskans. The bureau of education expects to establish a hospital at Tanana, of which Dr. Welch will be in charge when the summer work on the Yukon is completed.——A new general hospital, costing about $250,000, was recently opened at Wrangell.

CALIFORNIA

Dr. Wakefield Sentenced.—Dr. Orin R. Wakefield, Hollywood, was recently sentenced to four years' imprisonment for violation of the state narcotic act, it is reported; according to the testimony he sold morphine to a "movie extra" who was an addict. As noted in another item, Dr. Wakefield's license was revoked by the state board of medical examiners, July 13.

Personal.—Dr. Joseph B. Blackshaw has been appointed city health officer of Antioch to succeed the late Dr. Worth S. George, and Dr. John Rollin French has been appointed city health officer of Avalon to succeed Dr. Robert V. Baker. ——Dr. Stanley H. Mentzer, formerly a fellow in surgery at the Mayo Foundation, has accepted a teaching position surgery at the University of California.

New Full-Time Health Units.—Yolo and Riverside coun organized full-time county health units early in June; ot counties in the state already having full-time health u are San Diego, Orange, Los Angeles, Santa Barbara, Luis Obispo, Monterey and San Joaquin. Yolo County agreed to take over the work of public health administra of the city of Woodland; in Riverside County the new he unit will have to do only with unincorporated territory.

Resolution About Maternity.—The Santa Cruz Co Medical Society devoted a meeting recently to the subjec "What May Santa Cruz County Do to Decrease Mater Hazards?" at which an analysis of maternity statistics the years 1923 and 1925 was presented. The society pa a resolution to the effect that hereafter the maternity shall include all necessary prenatal and postnatal (one m after birth) service to mother and infant, and that all physicians and health agencies be requested to assist in broadcasting the reasons for this action.

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[1] Cameron, A. T., and Mackersie, W. G.: The relation of Stimulus (Dose) to Effect, J. Pharmacol. & Exper. Therap. 28:9 (July) 1926.

Licenses Revoked and Suspended.—At the regular meeting of the state board of medical examiners, San Francisco, July 13-15, the licenses of the following physicians were revoked:

Charles R. Elliott
Franklin E. Kerr
Robert J. McAdory
Rupert E. McKibbon
Arthur B. Nelson
Orin R. Wakefield

The license of Dr. Clarke S. Smith was suspended by the board for five years, commencing July 14, 1926.

More Physicians on Probation.—At the meeting of the state board of medical examiners, San Franciso, July 13-15, Dr. Robert Innis Bromley was placed on five years' probation and required to give up his narcotic permit, and not receive or apply for another within one year after July 15, 1926; Dr. James T. Brown was placed on five years' probation, beginning July 13, and required to give up his narcotic and alcohol permits during the period of probation; Dr. Jacob L. Owen was placed on five years' probation, commencing July 13; he shall not apply for or receive narcotic or alcohol permits during the term of probation; Dr. Casper L. A. Rinker was placed on five years' probation, commencing July 15, and he shall not apply for or receive a narcotic permit during the period of probation.

Promotions at the State University.—The following promotions in the faculty of the University of California Medical School will be effective for 1926-1927:

Dr. Alice F. Maxwell to associate clinical professor of obstetrics and gynecology.
Dr. Saxton T. Pope to associate clinical professor of surgery.
Dr. Margaret Schulze to assistant professor of obstetrics and gynecology.
Dr. Henry H. Searls to assistant professor of surgery.
Dr. Miriam E. Simpson to assistant professor of anatomy.
Dr. Frederick Eberson to assistant professor of medicine.
Dr. Francis S. Smyth to assistant professor of pediatrics.
Dr. Bradford F. Dearing to assistant clinical professor of pediatrics.
Dr. Frieda L. Kruse to instructor in pediatrics.
Dr. Lloyd E. Hardgrave to instructor in pediatrics.
Dr. Kunisada Kiyasu to instructor in pediatrics.
Dr. Thomas E. Gibson to instructor in urology.
Dr. Ina M. Richter to instructor in medicine.
Dr. Elizabeth A. Davis to instructor in medicine.
Dr. Dorothy W. Atkinson to instructor in medicine.
Dr. John J. Sampson to instructor in medicine.
Dr. Robert Emmett Allen to instructor in medicine.
Dr. Robertson Ward to instructor in surgery.
Dr. Dudley A. Smith to instructor in surgery.
Dr. Jessie L. P. Delprat to instructor in medicine.

Society News.—Dr. Frances Eastman Rose, Spokane, Wash., president, Medical Women's National Association, was guest of honor at a luncheon of the San Diego Medical Women's Club, June 11.——The San Joaquin County Medical Society held its last meeting of the season in June at W. B. Walker's ranch, eight miles east of Stockton, where the society voted to dispense with all business and make the meeting a social evening; after "a big feast in the open air," however, they adjourned to the house and Dr. Fred P. Clark gave an outline of the history of the society from its beginning in 1875; G. A. Werner, Ph.D., professor of history in the College of the Pacific, spoke on "Evolution"; there were also dancing and cards.——The San Mateo County Medical Society voted at its June meeting to bar from membership any physician who engages in the type of work requested by the "American National Health Service," which has been attempting to appoint physicians in the county to look after its policyholders at "compensation rates."——Dr. Leon H. Watkins, Los Angeles, addressed a joint meeting of the San Diego County Medical Society, recently, on "Urologic Aspects of Obscure Abdominal Pain."

CONNECTICUT

Dr. Campo and Others in "Dry" Raid.—Dr. Anthony R. Campo, Noroton, formerly a member of the notorious eclectic medical examining board, was arrested July 17, it is reported, and released on $1,500 bail on a charge of violating the Volstead act. The police are said to have raided a supposedly abandoned house on the premises of the "Noroton Relief Hospital," of which Dr. Campo is proprietor, and in which 5,000 gallons of alcohol, five stills, some wine and whisky were seized; others taken in the raid are said to have been Vito Palermo, Carmela Vita, Joseph Modica and Frank Biondo, all of Brooklyn (The Journal, Nov. 24, 1923, p. 1794).

Tuberculosis Work in New Haven.—Following a conference of organizations especially interested in tuberculosis work in New Haven, it was decided to carry on the work as a united community effort, beginning September 1, when there will be established a bureau of tuberculosis in the department of health with Dr. Willard B. Soper, Saranac Lake, N. Y., medical director of the bureau. For the first year, there is a budget of almost $12,000, exclusive of the supervisor and the nursing service; the General Hospital Society will contribute $5,700, the board of health, $5,250, and the Employees Tuberculosis Relief Association, $1,000. The new program will not be primarily a demonstration but a community effort that will be more economical and more effective.

GEORGIA

Personal. — Dr. Thomas J. McArthur, Cordele, has been appointed a member of the state board of medical examiners. ——Dr. John D. Jungmann tendered his resignation as city health officer of Columbus, May 24.

University News. — Mrs. St. John Moore, Augusta, has given the Medical Department of the University of Georgia $10,000; Mr. A. S. Bourne has given to the department of internal medicine an electrocardiograph, which has been installed in the University Hospital.

Physician Sentenced.—John W. Ward, M.D., Soperton, pleaded guilty to violation of the Harrison Narcotic Law before Judge Barrett at Savannah, July 2, it is reported, and was sentenced to one year and a day in the penitentiary. Dr. Ward is said to have served a sentence at Atlanta previously for a similar offense.

Society News. — Troup County Medical Society recently held a medical clinic at Dunson Hospital, La Grange, which was attended by almost every physician in the county. Dr. William J. Cranston, assistant professor of medicine, University of Georgia Medical Department, and Dr. William A. Mulherin, clinical professor of diseases of children at the university, were in charge of the clinics. The Troup County Medical Society is one of the 100 per cent county medical societies in the state.

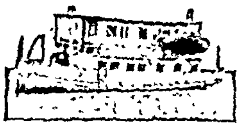
ILLINOIS

Forty-One Counties Have No Deaths from Diphtheria.—The mortality from diphtheria in Illinois last year was the lowest on record; there were forty-one counties with a total population of about 1,000,000 persons which reported no deaths from diphtheria, and the rate for the state was 5.8 per hundred thousand of population. Among the cities of 30,000 population or more, says the state health director, the highest diphtheria mortality was in Quincy, 13.1; Cicero, 12.8, and Moline, 11.7; the lowest mortality rate in this group of cities was in Peoria, 1.2, and Rockford, 1.3. Chicago had a diphtheria mortality rate of 8. The state distributes toxin-antitoxin without local cost to immunize against diphtheria, and parents who wish their children immunized only have to make arrangements with a local physician.

Hoxide Cancer Cure.—Harry M. Hoxsey, head of the "National Cancer Research Institute" of the "Hoxide" cancer quackery at Taylorville, was ordered arrested by states attorney Preihs, July 23, it is reported, on a charge of practicing medicine without a license; at the same time a warrant was issued for "Dr." S. Arvid Person, the institute's superintendent. Reports at first indicated that neither Hoxsey nor Person was to be found; later they were reported as having been arraigned and released under bonds of $1,000 each. Further information about these gentlemen, and the "National Cancer Research Institute" can be found in The Journal, January 2, in an article prepared by the Propaganda Department. The present action was taken by the state board of registration and education through the the activity of the assistant director, Mr. Samuel L. Antonow.

Report on Health Education.—At the annual meeting of the Illinois State Medical Society, the lay education committee reported that 914 educational talks had been made in the last year, at an average expense to the society of $2.86, in seventy-nine of the 102 counties in the state. This indicates, it is said, that many speakers not only donated their services but also paid their traveling expenses; ninety-two radio talks broadcast during the year cost, on an average, $1.15, and that was largely clerical. The committee organized and arranged, during the year, 145 exhibits and demonstrations on health education at an average cost of $24.60; these varied from simple exhibits of posters lent to rural schools to elaborate demonstrations of periodic health examinations. There were two community health pageants conducted in Chicago, costing about $5,000 and $5,750, and the receipts in each case just about covered the cost. The committee does not recommend the health pageant as a method to be widely used, as its successful conduct means the neglect of other state work equally vital. Supplementing the film service of the state department of health, 131 moving pictures obtained from the University of Wisconsin, the Metropolitan Life Insurance Company, the American Dental Association and the Society for Visual Education were shown before lay audiences. The most effective use of the press, the committee considers, is the "health columns," which appeared in fifty-seven down-state publications, each over the signature of the local county medical society, except in one county where it appears without a signature, and in another where it is used in the name of the county public health association. The committee reports on other educational activities and makes recommendations about educational work among laymen.

LOUISIANA



The "Grace George" Visits Mississippi.—At the request of the state health officer of Mississippi, the laboratory boat of the Louisiana State Board of Health, the *Grace George*, made a trip to the Tri-State Health Officers Conference on oyster and milk regulations at Gulf Port; the mayor of Biloxi requested that the boat visit that city also so the "oyster men" might see the boat's equipment. The *Grace George* at present is working in the Terrebonne and Barataria areas; it will soon take up an investigation of the bathing beaches on Lake Pontchartrain, and visit the oyster producing areas in the western part of the state. The boat was put in service, May 10, making its first trip to the Louisiana marsh, then making a sanitary survey of Bayou Bienvenue into which drainage from the city of New Orleans flows; then making a study of the oyster producing areas east of the Mississippi, and those of the Grand Bayou, and other sections east of the river. The boat, which is 48 feet long, is equipped to conduct various laboratory examinations, and has a personnel capable of conducting sanitary surveys.

MASSACHUSETTS

Hospital News.—There is to be a campaign for $350,000 to erect a new Framingham Union Hospital.——Dr. Lewis F. Baker has resigned as superintendent of the Burbank Hospital, Fitchburg, to become superintendent of the Union Hospital, Fall River.

Milk Conference.—The state commissioner of health and the milk producers held a conference, June 26, at the State House, Boston, to consider regulations for the handling and production of milk to submit to the legislature next winter. A bill was introduced in the last legislature which would prevent the sale of milk from cows not tuberculin tested, and of milk which had not been pasteurized.

MISSOURI

Personal.—The governor announced, June 30, the appointments of Drs. William A. Clark, Jefferson City, Herman S. Gove, Linn, and Elmer T. McGaugh, Richmond, as members of the state board of health.

Contractor Eichelberger Fined.—John D. Eichelberger, St. Louis, a contractor, was recently found guilty by a jury, it is reported, of practicing medicine without a license, and was fined $500. Inspectors of the health department who arrested Eichelberger testified that he had treated a patient for stomach trouble.

Kansas City Annual Clinical Conference.—The fall conference of the Kansas City Clinical Society will be in Kansas City, October 11-14, at the Hotel President. The program will include scientific motion pictures from 9 to 10:30 in the morning, followed by medical clinics and lectures. The round table luncheons will be ranged into medical and surgical groups, and those present may spend their mornings either at the clinics at the hospitals, or at lectures on the roof garden of the hospital. The guests will include Dr. Dean Lewis, professor of surgery, Johns Hopkins University, Baltimore; Dr. Clemens Pirquet, Vienna, Austria; Dr. Irving W. Potter, Buffalo; Dr. Thomas McCrae, Philadelphia; Dr. Edwin W. Ryerson, Chicago; Senator Royal S. Copeland, New York; Dr. Williams McKim Marriott, St. Louis; Dr. Arthur L. Chute, Boston; Dr. Frank H. Lahey, Boston; Dr. Percy Brown, New York; Dr. James J. King, New York, and Dr. F. Hoeffer McMechan, Avon Lake, Ohio.

NEW YORK

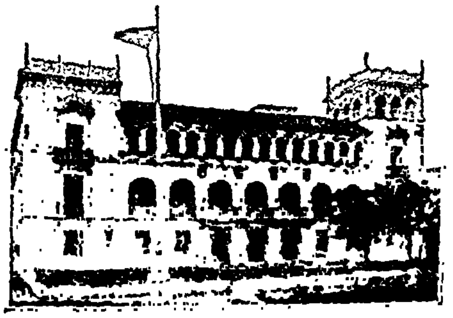
Conference of Health Officers.—The annual Conference of Health Officers and Public Health Nurses will be held in Buffalo, October 12, at the Statler Hotel during the annual meeting of the American Public Health Association. Among the subjects for discussion are "What New York State Is Doing for Cripples," "Progress of the Toxin-Antitoxin Campaign in New York State," and "Progress of Infant and Maternity Hygiene Work in New York State."

Society News.—The surgeons in Queens County have organized the Queensborough Surgical Society and elected Dr. Denis E. McMahon president, and Dr. Joseph S. Thomas, secretary.——The Westchester County Tuberculosis Committee has opened Camp Waymore for the third season; about fifty undernourished children will spend part of the summer there.——Dr. Raymond B. Scofield has been elected president of the Yonkers Practitioners' Club for the ensuing year.

Licenses Granted Last Year.—According to the annual report of the commissioner of education of the state of New York, the board of regents of that state granted licenses and certificates to practice to 823 physicians, twenty-one osteopaths and sixty-two optometrists. The regents also issued licenses and certificates to dentists, oral hygienists, pharmacists, junior pharmacists, druggists, veterinarists, engineers, land surveyors, nurses, shorthand reporters, public accountants, architects, trained attendants and chiropodists. The total of professional licenses and certificates granted was 7,654.

New York City

Hospital News.—Lincoln Hospital has opened a cystoscopic clinic for those who are unable to pay private physicians; patients will be admitted to the clinic on Tuesdays and Thursdays between 10 and 10:30, and Dr. Isidor Palais will be in charge.



Opening of School of Tropical Medicine.—In a new three story building in San Juan, near the sea, the School of Tropical Medicine of the University of Porto Rico, under the auspices of Columbia University, will be formally opened, September 22, and the first session will begin, October 1. At the formal opening, Columbia University will be represented by Dr. William Darrach, dean and professor of clinical surgery, College of Phyicians and Surgeons; Dr. James W. Jobling, professor of pathology; Prof. James C. Egbert, Ph.D., director of university extension, and Mr. Frederick Coykendall of the board of trustees. The governor of Porto Rico, Hon. H. M. Towner, president of the senate, Hon. Antonio R. Barceló, chairman, board of trustees, University of Porto Rico, and Dr. Darrach will deliver addresses. This is the first school of its kind to be established in the Americas; its primary aim is to give an opportunity to study tropical diseases in a tropical environment, and to observe the influence of exotic conditions on diseases in general. The courses offered are primarily for graduates in medicine; women will be admitted on the same terms as men. There will be a limited number of investigators to engage in research, and field work on the island may be carried on through the cooperation of the department of health. There are well equipped laboratories and a library in the new building, and a forty-bed hospital will soon be erected by the insular government. Pending the construction of this hospital, clinical instruction will be given at the Leper Hospital, the Presbyterian Hospital and the Quarantine Hospital, all near the school. A certificate in tropical medicine will be granted graduates in medicine who complete at least one year's work in residence, part of which must involve research in the preparation of a thesis. The faculty includes, among many others, the names of Dr. Robert A. Lambert, director of the school, Dr. Bailey K. Ashford, a collaborator, Dr. Aldo Castellani, visiting lecturer for 1926-1927, Dr. William T. Councilman, and a number of prominent Porto Rico physicians. For further information apply to the director of the school at San Juan, or to the dean of Columbia University College of Physicians and Surgeons, 437 West Fifty-Ninth Street, New York.

OHIO

Hospital News.—The Deaconess Hospital, Cincinnati, is to construct soon a $500,000 addition, which will provide 100 beds.——The Stillwater Sanatorium, which is supported by Montgomery and Preble counties, is contemplating a $500,000 addition for tuberculous patients.

Illegal Practitioners.—The state medical board reports that C. W. Ferguson, an unlicensed chiropractor, Columbus, was recently fined $100 and costs; L. Baugher, Fostoria, an unlicensed chiropractor, was fined $25; V. T. Deville, a naturopath, Columbus, recently forfeited his bond in municipal court; H. S. Gildard, Lakewood, was fined $100 for opening an office before he obtained a certificate.

Personal.—Dr. John H. J. Upham, Columbus, a trustee of the American Medical Association, delivered the annual oration in medicine at the recent annual meeting of the West Virginia State Medical Society, Morgantown.——Dr. John B. May, New Holland, recently observed his eighty-fourth birthday; Dr. May, it is said, seldom misses a meeting of the county medical society.——Dr. Charles H. Ross, Alliance, recently addressed the Pre-Medics Club of Mount Union College on "Advance in Medicine," and Dr. Oscar M. Craven, Springfield, addressed the students at Wittenberg College on "Purchasing Health."——Dr. Carlyle W. Dewey has been appointed coroner for Ashtabula county.——According to the *Ohio State Medical Journal*, Dr. Charles W. Moots has gone abroad to read a paper at the annual meeting of the British Medical Association at Nottingham, England.——The state medical journal notes that the following physicians are candidates for nomination for public office at the August primaries: Dr. Albert S. Rudy, Lima, councilor of the state association from the Third District. Dr. Daniel C. Houser, Urbana, councilor from the Second District, Dr. Charles F. Talley, Powell; Dr. Errett LeFever, Glouster, and Dr. Harry S. Davidon, Akron, are said to be candidates for renomination. ——Dr. Kenneth L. Weber, formerly of the U. S. Veterans' Bureau Hospital, Little Rock, Ark., has been appointed first assistant physician at the State Hospital, Lima, to succeed Dr. Wilhelm H. Vorbau, who is now at the state institution for the feebleminded at Orient; Dr. Weber formerly served three years at the Lima State Hospital.——Dr. Theodore F. Myler, Washington Court House, health commissioner of Fayette county, has been appointed resident physician to the Old Soldiers' and Sailors' Orphans' Home, Xenia.——

Society News.—The June meeting of the Eighth Councilor District Medical Society was attended by 112 members and guests; following a dinner party, Dr. George W. Crile, Cleveland, gave an address on "Functions of the Liver in Health and Disease," and Dr. Leora G. Bowers, Dayton, president of the state medical association, on "Postgraduate Medical Work"; Dr. Philip H. Cosner, Newark, president of district medical society, presided.——Fees totaling $800, received by physicians of Bellaire for services rendered during the Powhatan mine disaster, were donated to the Bellaire City Hospital.——The physicians of Defiance have arranged to close their offices Thursday afternoons during the summer, and have agreed on relief physicians during this period.——Dr. Arthur C. Bachmeyer, dean, University of Cincinnati College of Medicine, recently addressed the Cincinnati Academy of Medicine on "Some Aspects of Medical Education."——Dr. William Mithoefer, Cincinnati, addressed the Claremont County Medical Society, Loveland, June 16, on "Sinus Infection."——Dr. Arthur Schuller, Vienna, Austria, gave a postgraduate course of lectures before the Academy of Medicine of Toledo and Lucas County, recently, on "Roentgen-Ray Diagnosis of the Skull"; Dr. Frank N. Wilson, University of Michigan Medical School, Ann Arbor, gave the second course of lectures on "The Heart." The academy plans two additional postgraduate courses for the fall month.——The Trumbull County Medical Society held a joint meeting with the Trumbull County Bar Association at the Warren Country Club; there was a golf tournament and a dinner. Dr. Charles W. Stone, Cleveland, and Hon. John Cline discussed proposed legislation concerning expert testimony.——Dr. Dennis E. Jackson, University of Cincinnati College of Medicine, addressed the Columbus Academy of Medicine, recently, on "Glimpse of Medical Practice in Former Times."——At a meeting of the Allen County Academy of Medicine, Lima, July 20, a set of golf sticks was presented to Dr. Wilhelm H. Vorbau, formerly assistant physician at the Lima State Hospital, who addressed the academy on "Some Nervous Diseases and the General Practitioner."

OREGON

Society News.—The Medical Arts Building in Portland was opened, June 17, with appropriate ceremonies.——Dr. William J. Mayo, Rochester, Minn., addressed the Portland County and City Medical Society, July 7, on "Diseases of the Spleen."

Personal.—Dr. Merle W. Moore, Portland, has been appointed physician in charge of the sesquicentennial hospital, Philadelphia.——Dr. Samuel C. Slocum, Portland, recently won for the third time the golf championship of the Waverly Country Club.

Hospital for Indians.—The Department of the Interior has let the contract for the construction of a fifty bed hospital for the Indians on the Klamath Reservation at Klamath. It will be finished in about three months. There are 1,241 Indians on this reservation.

RHODE ISLAND

Society News.—Dr. Edward L. Myers has been elected president of the Woonsocket District Medical Society for the ensuing year, and Dr. William A. King, secretary.——The trustees of the Caleb Fiske Fund awarded the prize this year to Dr. Elliott S. A. Robinson, Boston, for an essay on "Recent Progress in Prevention and Treatment of Scarlatina, Measles and Diphtheria"; a $250 prize will be awarded to the winning essay in 1927 on the subject of "Calcium Metabolism as Related to Therapy." The secretary of the fund is Dr. Eric P. Stone.

SOUTH CAROLINA

Hospital News.—The contract has been let for the new $250,000 Burgiss Shrine Hospital for Crippled Children, Greenville, which will have a capacity of fifty beds.——The Hays' Hospital at Clinton was recently destroyed by fire.

Mortality Rate Decreased.—According to the Department of Commerce, the death rate of South Carolina for 1925 was 1,219 per hundred thousand of population, as compared with 1,300 in 1924. The decrease is largely accounted for by smaller death rates for measles (from 31 to less than 1 per hundred thousand); all forms of pneumonia (from 102 to 77 per hundred thousand); whooping cough (from 27 to 11); malaria (from 15 to 10), and diarrhea under 2 years of age (from 55 to 42).

SOUTH DAKOTA

State Board of Health.—At the May meeting of the state board of health, Dr. Robert D. Alway, Aberdeen, was elected president; Dr. Hampton R. Kenaston, Bonesteel, vice president, and Dr. John F. D. Cook, Waubay, secretary. The board appointed the following physicians members of county boards of health to fill vacancies:

Drs. Roy F. Sackett, Parker, and Edward Joyce, Hurley, Turner County Board of Health
Frederick Treon, Chamberlain, Brule County Board of Health.
Harry C. Durkee, Faith, Meade County Board of Health.
Harold W. Riggs, Armour, Douglas County Board of Health.
John S. Tschetter, Huron, Beadle County Board of Health.
Frank M. Loring, Artesian, and Paul P. Halleck, Letcher, Sanborn County Board of Health.

TENNESSEE

Personal.—Dr. Edward A. Lane, director, division of epidemiology, state department of health, resigned, effective, July 16, to accept a similar position in Boston with the Massachusetts State Health Department; he will be succeeded by Dr. H. C. Stewart.

Society News.—The Tri-County Medical Society, comprising Carroll, Henry and Weakley counties, held its annual picnic, July 13 at McKenzie; Dr. William D. Haggard, Nashville, spoke on "Radium Treatment of Tumors of the Uterus"; Dr. George R. Livermore, Memphis, on "Bladder Neck Obstruction," and Dr. Virgil E. Massey, Huntingdon, on "Acute Appendicitis."

Health at Nashville.—Telegraphic returns to the department of commerce from sixty-four cities with a total population of about 29,000,000 for the week ending July 10 indicate that the highest mortality rate (27.8) was for Nashville, and that the rate for the group as a whole was 11.7. The death rate for Nashville for the corresponding period last year was 19.5, and for the group of cities, 11.8.——The report of the department of commerce for the week ending July 17 also showed that the highest mortality rate (24.7) among a group of sixty-five cities was that for Nashville, and the mortality rate for the group of cities as a whole was 10.8.

TEXAS

Veteran Practitioners Honored.—The Hill County Medical Society held a banquet on the lawn of the Boyd Sanatorium, Hillsboro, July 9, in honor of physicians of the county who have been in practice thirty-five years or more. The honor guests included Drs. Thomas R. Dean, Whitney; R. M. Greer, Whitney; Aaron B. McPherson, Lovelace; James S. McKown, Osceola; John Buie, James W. Miller, Andrew J. Menefee, James J. Roberts, Benjamin F. Smith, James W. Spalding, all of Hillsboro; J. B. McAllister, Aquilla; J. H. Young, Itasca, J. P. Weir, Covington, and William A. Wood, Waco, who practiced at Hubbard for years. Dr. Foster D. Sims, Abbott, president of the society, was toastmaster.

VIRGINIA

Nurse Appointed County Health Officer.—Miss M. Anne Owen has been appointed health officer of Northampton County, it is reported; for more than a year Miss Owen has been county nurse. Northampton county also has a woman on its board of health, who was appointed to that position to succeed the late Dr. Carlisle L. Nottingham.

Personal.—Dr. Robert Bruce James, Danville, has been appointed post physician and lecturer on biology at the Virginia Military Institute, Lexington, Va., and will take up his new duties in September.——Dr. Joseph A. McGuire, Norton, has been appointed by the governor a member of the state board of health, effective, July 1.——Dr. James Edwin Wood, Jr., associate professor of internal medicine, University of Virginia Medical School, has been granted a year's leave of absence to do research work abroad.

WASHINGTON

Personal.—The late Dr. Charles H. Burbank, Seattle, bequeathed funds to establish in the general hospital of that city a three bed ward for diabetic boys, where they may obtain hospital care for a year if necessary.——Dr. Leon G. Woodford, Everett, has been elected president of the staff of Providence Hospital.

Restoration of License Rescinded.—The state bureau of licenses rescinded the action taken recently by the commissioner of licenses in the case of Dr. Annie K. Russell, Seattle. The commissioner is said to have restored Dr. Russell's license without consulting the medical authorities of the state. Dr. Russell's license was revoked in 1915.

Health Officer Appointed.—Dr. Herman S. Judd has been appointed city health officer of Tacoma, it is reported, to succeed Dr. Charles F. Engels, resigned. Dr. Judd is a graduate of Rush Medical College, Chicago, and a practitioner of many years' experience; he served during the World War, and later at the Western State Hospital at Steilacoom and in the Veterans' Bureau.

WISCONSIN

Medical Care for Students.—The University of Wisconsin conducts a student health service, it is reported, on the staff of which are nine full-time physicians, two nurses, two technicians and six clerks, who also conduct the students' infirmary, a modern hospital separate from the Wisconsin General Hospital. There were 1,819 admissions to the students' infirmary last year among about 8,000 students enrolled in the university; about 61 per cent of the men and 83 per cent of the women made some call for health service at the clinic or infirmary. The student pays $3.50 each semester for medical service; he may call one of the nine physicians at any time, and may remain in the infirmary during the entire semester, receive his board and room, and certain laboratory service; in addition, affiliation with the university medical school makes possible consultation with other physicians on the faculty without extra charge to the student.

State Medical Meeting.—The eighty-fifth annual meeting of the Wisconsin State Medical Association will be at Madison, September 15-17. Six general subjects will be given a half day each on the program: general therapeutics, internal medicine, allergy of the skin and vaccines, orthopedic surgery, obstetrics and pediatrics, and general surgery. Among the speakers will be Dr. Bernard Fantus, Chicago; Dr. Curran Pope, Louisville, Ky.; Dr. Joseph A. Capps, Chicago, who will present a demonstration of a periodic examination of an apparently healthy person; Dr. Joseph L. Miller, Chicago; Dr. John L. Porter, Evanston, Ill.; Dr. John O. Polak, Brooklyn; Dr. Joseph Brennemann, Chicago; Dr. Henry F. Helmholz, Rochester, Minn., and Dr. Ernest Sachs, St. Louis. President Glenn Frank of the University of Wisconsin will address the annual dinner meeting at the Hotel Loraine, Thursday evening. The Dane County Medical Society has arranged a garden party for members and their wives, to be held near Madison, Wednesday afternoon, and, in the evening, a smoker for the members. There will be a symposium Thursday morning led by Dr. Otto H. Foerster, Milwaukee, and Dr. Harry S. Bernton, Washington, D. C. Dr. Edward J. Goodwin, secretary, Missouri State Medical Society, will be the guest at the meeting of the constituent medical societies, Thursday. The council and other officers of the state society will be guests of the secretary at a dinner Tuesday afternoon at the Madison Club. The golf tournament will be played Tuesday; various other entertainments and scientific features are being arranged.

LATIN AMERICA

French Scientists to Lecture.—Mme. Curie and fourteen other French scientists sailed for São Paulo and Rio de Janeiro, June 26, according to *Science,* in response to an invitation to the French government through the Brazilian embassy to give a series of lectures to students of Brazil on French science and art.

National Maternity Council.—The board of the Central Compulsory Insurance Fund of Chile has decided to create a national maternity council, which will organize throughout the nation services to give efficient care to the working mothers during pregnancy and childbirth, in accordance with the requirements of the insurance fund law. These services will include prenatal and child health clinics, maternity hospitals, home care and antisyphilis clinics. Dr. Carlos Mönckeberg, professor of obstetrics, University of Chile, has been appointed president of the maternity council.

New Health Building.—An imposing building will be erected in Montevideo, Uruguay, to house the Institute for the Prophylaxis of Syphilis and the National Hygiene Council. The plans took the prize in a competition among architects; on the jury of award, among others, were Drs. Alejandro Gallinal, Hector del Campo and Alfredo Vidal y Fuentes. The institute will have in this building, dispensaries, laboratories, clinics, an auditorium, library and offices. The National Hygiene Council will have offices and quarters for such departments as sanitation, chemical and biologic laboratories, statistical bureau and pharmacy inspection.

GENERAL

American Association of Psychiatric Social Workers.—This new organization was formed at Cleveland in May, and the section on psychiatric social work of the American Association of Hospital Social Workers was formally disbanded after due consideration. It was considered that the best interests of the group lay in a broader field than one that is necessarily centered largely in hospitals and is, therefore, primarily medical. Mrs. Maida H. Solomon, Boston, was elected president of the new organization, and Miss Kathleen Ormsby, National Committee for Mental Hygiene, secretary-treasurer. The annual meeting will be held at Des Moines at the time of the National Conference of Social Workers.

American Electrotherapeutic Association.—The thirty-sixth annual meeting of this association will be at Atlantic City, September 8-11, with headquarters at the Hotel Ambassador, and under the presidency of Dr. Victor C. Pedersen, New York. . Legally licensed physicians will be welcome at this meeting and at the clinical session in Philadelphia, Tuesday, preceding the meeting, where there will be a demonstration of physical therapeutic methods at the Polyclinic Hospital and a clinical conference, and a clinic on surgical electrothermic methods at the William L. Clark Hospital. Among the invited guests are Dr. Frank Nagelschmidt, Berlin, Germany; Dr. Joseph Rivière, Paris, France; Dr. Joseph N. Chausse and Dr. Sylvio LaFortune, both of Montreal, Canada, and Dr. Foveau de Courmelles, Paris, France. Addresses will be made by leading physicians in the specialty in this country; an address on "Periodic Health Examinations and Management of Findings" will be given by Dr. William B. Snow, New York, in whose honor there will be a testimonial dinner, Friday evening.

Chiropractic Division in Veterans' Bureau Proposed.—Mr. Frazier has introduced in the Senate a bill (S. 4124) proposing to establish in the U. S. Veterans' Bureau a permanent division of "drugless health sciences," including chiropractic, osteopathy and physical culture, and providing that the chief of the drugless division shall be a practicing chiropractor who shall also be the executive head of the drugless division. The bill was referred to the committee on finance, before which it is now pending. Gen Frank T. Hines, director of the Veterans' Bureau, has written to the chairman of the committee, Senator Smoot, opposing the bill, stating, among other things, that it does not appear necessary to provide for such a division in view of the excellent equipment already provided in hospitals and regional offices for the care and treatment of veterans, and pointing out that the introduction of "another school of medical practice would fatally complicate" the administrative problem, and would raise issues which would dangerously interfere with the imperatively urgent duty of giving ex-service men medical care and treatment.

Appointments and Promotions at the Rockefeller Institute.—Charles R Stockard, Ph D, has been appointed a member of the board of scientific directors of the Rockefeller Institute for Medical Research, New York; other changes announced include the appointment of Prof Duncan A MacInnes, Ph D, associate member, and the following as assistants: Drs Philip G. Cohen, Walter P. Covell, John A. V. Davies, Lewis A. Eldridge, Jr, Jacob Furth, Donald M Hetler, Lawrence S. Kubie, Eaton M. MacKay, Julius Sendroy, Fred W. Stewart and Alphonse Walti. Rudolf W. Glaser, ScD, and Dr Philip D. McMaster have been promoted from associate to associate members. The following have been promoted from assistant to associate: Dr. Douglas R. Drury, James A Hawkins, Ph D, Moses Kunitz, M.S, Clara J. Lynch, Ph D, Ida W. Pritchett, Sc D, Lars A. Welo, Ph D——Albert B. Hastings, Ph D, formerly an associate at the institute, has accepted an appointment as professor of physiologic chemistry at the University of Chicago, and David I Hitchcock, Ph D, formerly an associate in the division of general physiology, has accepted an appointment as associate professor of physiology and biochemistry at Bryn Mawr College.

Fellows Appointed to Positions.—The following fellows in medicine of the National Research Council have accepted the positions indicated, effective on the termination of their fellowships:

Barry J. Anson, A M, working as fellow with Dr Frederick T Lewis, Harvard, appointed to position of instructor in anatomy, Northwestern University Medical School

Dr Sydney W. Britton, working as fellow with Dr. Walter B Cannon, Harvard, appointed to position of associate in physiology, Johns Hopkins

Dr William V Cone, working as fellow with Dr James W Jobling, Columbia, appointed to a position in the department of surgery, College of Physicians and Surgeons, Columbia University

Benjamin Freeman, Ph D, working as fellow with Alfred M Richards, Sc D, Pennsylvania, appointed to position of instructor in biochemistry, Western Reserve

Thomas P Hughes, A M., working as fellow with Dr Hans Zinsser, Harvard, appointed to position of assistant in bacteriology, Rockefeller Institute

Moses L Isaacs, working as fellow with Dr Frederick P Gay, Columbia, appointed to a position in the department of public health, College of Physicians and Surgeons, Columbia

James A Kennedy, Ph D, working as fellow with Dr Hans Zinsser, Harvard, appointed to position of instructor in bacteriology, University of Rochester

Dr Beatrice Carrier Seegal, working as fellow with Dr S Burt Wolbach Harvard, appointed to a position of pathologist, Long Island Hospital, Boston

Dr Fred W Stewart, working as fellow with Dr Frank B Mallory, Boston City Hospital, appointed to a position in the Rockefeller Institute for Medical Research

Dr Harry B van Dyke, working as fellow with Dr Cushny, Edinburgh, and Dr Trendelenburg, Freiburg, appointed to position of associate professor in pharmacology, University of Chicago

Report of International Health Board.—During 1925, the International Health Board of the Rockefeller Foundation gave assistance to public health enterprises of various types in ninety-seven states and countries. It participated in infection and sanitation surveys, operations for the control of yellow fever and hookworm disease, field studies and experiments in malaria control, county and rural health work, the development of special divisions of public health services, and the establishment and maintenance of schools and institutes of hygiene and public health It also provided 197 fellowships for training in public health for men and women from twenty-seven countries, supported field stations for the training of prospective health officers in methods of malaria and hookworm control and in other public health work, and contributed funds to the Health Section of the League of Nations toward the support of international interchanges of public health personnel, the maintenance of an epidemiologic and public health intelligence service, and the training of government health officials in vital and public health statistics. The board assisted the following countries in hookworm control operations: Mexico, Nicaragua, Guatemala, Panama, Honduras, Porto Rico, Jamaica, Colombia, Paraguay, Ceylon, Madras Presidency, Siam, Java, Mauritius, Fiji and Tonga. Hookworm surveys were made in Montserrat, Haiti, Java, the Straits Settlements, the Seychelles, Cook Island, Tonga, the New Hebrides, and the mines of Spain. A total of 147 fellowships was awarded by the board in 1925. Of these, fifty-eight were allotted in the Americas, including twenty-nine in the United States, seventy-one went to Europeans, and eighteen to the East. In addition to these fellowships, fifty-one resident fellowships were awarded for study within the student's own country. Eleven of these fellowships were allotted to Hungary, four to Italy, and thirty-six to Jugoslavia.

FOREIGN

British Association to Investigate Psychanalysis.—According to the New York *Tribune*, the British Medical Association at the recent meeting at Nottingham voted to appoint a committee to conduct an investigation of psychanalysis. Those who opposed the resolution protested, it is said, that psychanalysis was not yet sufficiently established as a science to justify an investigation by the association.

Marañon Imprisoned.—The *Revista Médica de Málaga* of July 1, our latest Spanish exchange, brings word that Dr Gregorio Marañon of Madrid has been arrested by government order and imprisoned. Our exchange does not mention or comment on the reasons for this procedure, but deplores the loss to science of even a few days of his clinical and laboratory work. Press reports indicate that the reason given was of a political nature. Marañon's name is familiar to the readers of THE JOURNAL; his contributions to internal medicine are frequently summarized in our Current Literature department.

Personal.—Sir George Newman, chief medical officer, ministry of health, gave an address at the two hundredth celebration of the founding of the Faculty of Medicine at Edinburgh University, Scotland, June 11.——Dr P. Watson-Williams has resigned as editor of the *Bristol Medico-Chirurgical Journal* after twenty-five years of service on the editorial committee.——The Victor Horsley Memorial Lecture of the British Medical Association was delivered, July 9, at the association's headquarters, by Mr Wilfred Trotter, surgeon to the University College Hospital, on "The Insulation of the Nervous System"——Dr. Georg Winter, professor of gynecology at the University of Konigsberg, has retired on reaching the age of 70, he has long been in the vanguard in combating uterine cancer——Prof. R. Maresch has been appointed dean of the medical department of the University of Vienna——Prof. E Froschels, Vienna, is to preside at the second congress of the International Society for Study of Speech and the Voice, which is to be held at Vienna this month Dr. Schilder will open the discussion on speech disturbances of central origin——Dr. W. W. C Topley has been appointed to the chair of bacteriology and immunology at the University of London, and Dr. M. Greenwood to the chair of epidemiology and vital statistics——Prof. G. Viale of the chair of physiology at the University of Sassari, Italy, has been appointed to a similar chair at the University of Buenos Aires——Dr. and Senator G Fano, professor of physiology at the University of Rome, has been elected president of the newly organized Italian Società di biologia sperimentale——Dr. Uhlenhuth, Freiburg, was appointed to represent Germany at the semicentennial of the Royal Sanitary Institute and Congress, at London in July——Dr. Carl Hamel succeeds Dr. Bumm as president of the German public health service——Dr E Fischer, professor of anatomy at the University of Freiburg, has been appointed director of the institute for anthropologic research now being organized at Dahlem——Dr G. Lennhoff reports that the German Antiquackery Society has now 26,000 members, and its official organ, the *Gesundheitslehrer*, 19,000 subscribers, but that the cooperation of physicians leaves much to be desired——Dr O Capitan has been appointed to represent the French Académie de médecine at the twenty-second International Americanist Congress at Rome in September.——Dr. L Raynaud, chief of the public health service in Algeria, member of the health board of the League of Nations, was given the task of organizing a pan-African epidemiologic bureau of information as decided at the recent international sanitary conference at Paris: he is to make a preliminary survey of conditions in Algeria as a basis for the work.

Government Services

Strength of Army Medical Reserve

The annual report of the Surgeon General's Office will show the following strength of the various corps of the medical department reserve:

Medical corps	10,327
Medical administrative corps	1,496
Sanitary corps	497

A very considerable part of the accomplishment is the result of the interest manifested by physicians to attain the proper medical service for the armies under a general mobilization plan. The number of physicians now enrolled in the reserve and available for assignment to units and training is less than 50 per cent of the number that will be required under the general mobilization plan. The Surgeon General desires that the medical profession of the United States be kept fully informed as to the status of the medical preparedness program. It is hoped that the military obligations of the medical profession to develop a satisfactory reserve corps will result at an early date in the complete success of the plans of the war department to enrol a sufficient number to complete the organization of units which will be necessary for military service under the general mobilization plan.

Changes in Medical Personnel

The U. S. Veterans' Bureau Medical Bulletin, July, notes the following resignations:

Dr. Joseph G. Anderson, Hospital no. 63, Lake City, Fla., April 3, 1926.
Dr. Willard P. Greene, Hospital no. 60, Oteen, N. C., April 9, 1926.
Dr. John S. Harlow, Jr., Hospital no. 44, West Roxbury, Mass., April 30, 1926.
Dr. William R. Leverton, Hospital no. 59, Tacoma, Wash., April 21, 1926.
Dr. Marcellus McCreary, Hospital no. 55, Fort Bayard, N. M., May 10, 1926.
Dr. Duncan D Monroe, Hospital no. 79, Outwood, Ky., May 5, 1926.
Dr. Lawrence W. Pence, Hospital no. 69, Fort Thomas, Ky., April 2, 1926.
Dr. Andrew F. O'Connor, Hospital no. 101, St. Cloud, Minn., April 27, 1926.
Dr. Orville R. S. Sheffield, Hospital no. 91, Tuskegee, Ala., March 24, 1926.

Dr. John H. Thompson was recently appointed to the Veterans' Bureau.

New Army Medical Officers

The Surgeon General's Office announces the appointment in the medical corps of the regular army of the following physicians, who have finished their fifth year of training or internship. Their appointments were confirmed by Congress, July 2.

From Letterman General Hospital:
- Emery E. Alling, Oklahoma University Medical School.
- George E. Armstrong, Indiana University.
- Charles H. Beasley, Washington University.
- Hobart D. Belknap, University of Oregon Medical School.
- Clifford A. Best, Iowa State University.
- William O. French, Jr., Stanford University.
- Alvin L. Gorby, Oklahoma University Medical School.
- LaFayette Monson, University of Pennsylvania.
- Verner E. Ruedy, University of Oregon Medical School.

From William Beaumont General Hospital:
- Mack M. Green, Vanderbilt University Medical School.
- Martin E. Griffin, Iowa State University.
- Reuel E. Hewitt, Iowa State University.
- Harold E. Rhame, George Washington University.

The following officers of the reserve corps who have been on active duty at military hospitals have also been commissioned in the regular army medical corps:

Fitzsimons General Hospital:
- Cecil W. Dingman, University of Nebraska.
- William Kraus, Johns Hopkins.
- Robert S. Lilla, Jefferson Medical College.
- Bennie A. Moxness, Georgetown University.
- William E. Shambora, Georgetown University.

Fort Sam Houston:
- Eugene W. Billick University of Pittsburgh.
- Charles A. McDowell, University of Pittsburgh.
- Bennet J. McGuire, University of Pittsburgh.
- Loren D. Moore, Washington University.
- Merrit G. Ringer, Northwestern University.
- Earle G. G. Standlee, Baylor University.
- Arthur B. Welsh, University of Pittsburgh.

Dr. Dwight M. Young, a graduate of Tulane University in 1925, was also commissioned as a first lieutenant in the regular army at the same time.

Appointments in Public Health Service

The Surgeon General, U. S. Public Health Service, announces the appointment of the following physicians in the grade of assistant surgeon, effective the date of oath:

Gerald T. Sprague
Kirby K. Bryant
William H. Sebrell, Jr.
George G. Holdt
Edward R. Pelikan
Homer L. Skinner
Clifford L. Wilmoth
Charles L. Quaintance
Anthony P. Rubino
John W. Scott

Notice of Examination for Public Health Service

Examinations will be held, August 9, for entrance into the regular corps of the U. S. Public Health Service at San Francisco, New Orleans, Chicago and Washington, D. C. Requests for permission to take the examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C. Candidates must be not less than 23 nor more than 32 years of age, and they must have graduated in medicine at some reputable medical college, and have had one year's internship or two years' professional practice. They must pass oral, written and clinical tests before a board of medical officers, and undergo a physical examination.

Reserve Officers Serving Internships

The following physicians appointed recently in the medical reserve corps of the army have been assigned to active duty in a military hospital, effective, August 1, to pursue an internship with a view to qualifying for a commission in the regular army medical corps:

Walter Reed General Hospital, Washington, D. C.

Name	Medical School	Home Address
John P. Bachman	University of Buffalo	Buffalo
Richard A. Bowen, II	Medical Coll. of Virginia	Richmond, Va.
William F. Burdick	Univ. of [illegible]	[illegible] Pa.
Roger B. Burrus	Vanderbilt [illegible]	[illegible].y.
Carlton Goodiel	George Washington Univ.	Harrisburg, Pa.
Patrick B. Hughes	Univ. of Pennsylvania	Carbondale, Pa.
Horace P. Marvin	University of Vermont	Essex Junction, Vt.
Marion W. Ransone	Medical Coll. of Virginia	Hampton, Va.
Hiram F. Sharpley, Jr.	Univ. of Pennsylvania	Tybee, Ga.

Letterman General Hospital, Presidio of San Francisco

Name	Medical School	Home Address
Fletcher E. Ammons	Medical Coll. of Virginia	Hampton, Va.
Thomas W. Christman	University of Oregon	Portland, Ore.
Jay C. Davis	University of [illegible]	[illegible]
Lester M. Dyke	University of [illegible]	[illegible]
Harold W. Glattly	University of [illegible]	[illegible]
Arthur J. Redland	Jefferson Medical College	Ardsley, Pa.
James B. Smith, Jr.	Medical Coll. of Virginia	Sharps, Va.
Kenneth G. Smith	University of Oregon	Portland, Ore.
John H. White	University of Oregon	Portland, Ore.

William Beaumont General Hospital, El Paso, Texas

Name	Medical School	Home Address
Modestus W. S. Buechele	Jefferson Med. College	Altoona, Pa.
William R. Craig	Vanderbilt University	Harrogate, Tenn.
Ernest G. Kelly	Vanderbilt University	Plantersville, Miss.
Hardy A. Kemp	St. Louis University	Cassville, Mo.
William L. Wilson	Baylor University	Dallas, Texas

Fitzsimons General Hospital, Denver

Name	Medical School	Home Address
Frank E. Council	Vanderbilt University	Windon, Texas
Wilbur H. Miller	Jefferson Med. College	Mifflinville, Pa.
William H. Seale	Baylor University	Floydada, Texas
Harold L. Stewart	Jefferson Med. College	Houtzdale, Pa.

Station Hospital, Fort Sam Houston, Texas

Name	Medical School	Home Address
John B. Chester	Vanderbilt University	Nashville, Tenn.
John J. Curley	Albany Medical College	Troy, N. Y.
James P. Gill, Jr.	Vanderbilt University	Dallas, Texas
James D. Harper	St. Louis University	St. Louis
Henry B. Lavery	St. Louis University	Dubuque, Iowa
George B. Moore, Jr.	Vanderbilt University	San Antonio, Texas
Ralph M. Sloan	Vanderbilt University	Black Rock, Ark.
William B. Wilson	St. Louis University	Cape Girardeau, Mo.

Reserve Public Health Officers Assigned to Duty for Training

The U. S. Public Health Service has issued orders assigning among others, the following physicians, assistant surgeons in the reserve, to active duty for training at the following hospitals:

George D. Boone, Jr., U. S. M. H. no. 21, Stapleton, N. Y.
Fred W. Caudill, U. S. M. H. no. 14, New Orleans.
Leon O. Spencer, U. S. M. H. no 14, New Orleans.
Carles B. Stacy, U. S. M. H. no. 14, New Orleans.
James P. Bailey, U. S. M. H. no. 19, San Francisco.
Leo J. Hand, U. S. M. H. no 5, Chicago.
Ralph Horton, U. S. M. H. no. 14, New Orleans.
Clarence D. Kosar, U. S. M. H. no 21, Stapleton, N. Y.
Leon O. Parker, U. S. M. H. no 21, Stapleton, N. Y.
Cecil C. Swann, U. S. M. H. no 14, New Orleans.
Joseph F. Van Ackeran, U. S. M. H. no 14, New Orleans.
George R. Welch, U. S. M. H. no. 14, New Orleans.
Burbridge S. Yancey, U. S. M. H. no. 1, Baltimore.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 10, 1926.

The Macewen Memorial

On commemoration day at Glasgow University, tributes were paid to the memory of Sir William Macewen, who occupied the regius chair of surgery for thirty-two years. It was intended that Harvey Cushing should deliver an oration on the life and work of Macewen, but he was unable to visit our shores this year. In his absence Archibald Young, successor to Sir William Macewen in the regius chair, gave an oration. Professor Young began with the statement that Macewen's life and Macewen's work were synonymous; his life was his work, and his work was his life. He seemed to have been actuated by the determination, perhaps hardly formulated in his mind, to devote his great powers unceasingly to orderly advance. This was abundantly illustrated by the remarkable list of his works, comprising more than seventy contributions to the literature of surgery, the greater part being papers and monographs of importance and representing a mass of scientific research and investigation that might have occupied the energy of several earnest workers. Some of his larger works by their inherent merit, scientific insight, and irrefutable demonstration, such as those on pyogenic diseases of the brain and spinal cord, and his works on osteotomy and on the growth of bone became classic. His "Atlas of Head Sections" was a contribution to surgical anatomy of the skull and brain which stood out as a permanent addition to science. This was published in the same year as his great work on pyogenic diseases of the brain and cord, only five years after the memorable address on the surgery of the brain and spinal cord, delivered to the British Medical Association in Glasgow in 1888. During this period he also published a number of notable papers in other departments of surgery, so that this must have been almost the busiest period in his life.

In attempting to make an analysis of Macewen's character as it was presented in his life and his work, Professor Young made especial reference to several traits. Among the first was an infinite capacity for taking pains. No amount of trouble was too great if it meant the possible clearing up of a difficulty or the confirming of an observation. No detail of description, provided it was apposite, was ever wittingly omitted from a report or from an argument. Macewen was as meticulous in testing his tools as he was in verifying his facts. This was illustrated in his monograph on osteotomy and in his paper on chromic catgut, its method of preparation and its behavior in living tissues. A further trait was his faculty for taking full value out of every part of his work, in whatever line his energies were employed for the time. This was evident even in the earliest years of his medical life, when, in the course of his routine duties as police casualty surgeon in Glasgow, Macewen made observations on the minor problems that presented themselves, such as the diagnosis of alcoholic coma, and wounds in relation to the instruments that produce them. A third trait in Macewen's character the lecturer referred to without offense as his self-sufficiency. He was not and could not be a cooperator. He had confidence in his own powers, his own resources and his own judgment. He did not readily accept the judgment of others, and seemed almost to cultivate a spirit of distrust of anything he had not himself put to the proof. Tradition meant little to him; surgical dogma he accepted only where and when his own judgment was convinced by his own observation and deduction. In his teaching of students he encouraged this attitude of mind, and had much sympathy with what has been called "philosophic doubt." Neither team work nor the team spirit attracted him, but he had the faculty of getting the last ounce of work out of his assistant workers, because he gave the last ounce himself. Another quality of his work was thoroughness and completeness. He was never in a hurry to publish, and when he made his statement it was final. This note of finality was peculiar to much of his work; it represented, in as perfect a form as he could give to the world, what was his final position at that stage, one more well set rung in the ladder of advancing knowledge; but he would have been the last to claim in respect of any of his work that it was possible ever to reach finality.

Higher Pay for the Army Medical Service

An earnest attempt has been made to meet a grievance in connection with the army medical service. It has been urged not only by the officers themselves but also by medical bodies that their position was not comparable with the position and prospects of civilian physicians. A result was that few medical students looked to the army for a career, and in the service the seniors had been commuting their pensions and getting into civil practice before they became middle aged. The war office announces higher rates of pay and of retiring gratuities and improvement of the conditions of promotion and retirement of officers of the royal army medical corps, the army dental corps and the royal army veterinary corps. An officer of the royal army medical corps employed at the war office as assistant director general, assistant director or deputy assistant director general will receive additional pay at the rate of $1 a day instead of 50 cents as at present; and the rate of additional pay for officers appointed to act as specialists will be increased to $1 a day for all subjects. An officer commissioned after holding a resident appointment of not less than one year in a civil hospital may be granted an antedate not exceeding one year in respect of the period spent in such an appointment, provided that the interval between the termination of the hospital appointment and the date of entry into the service shall not ordinarily exceed six months. This antedate will count as commissioned service for the purpose of increments of pay, promotion, retirement, retired pay and retiring gratuities. An officer will be eligible to retire with a gratuity of $5,000 after seven years' service instead of after eight and a half years, and an officer who after three years' service as a major is eligible to retire with a gratuity of $9,000 or after six years' service as a major with a gratuity of $12,500 will be eligible to retire with $14,000 in lieu of $9,000, and $17,500 in lieu of $12,500. An officer serving as a medical officer in the royal army medical corps, Sept. 13, 1919, will be eligible on retirement as a major after twenty years' service for retired pay at a daily rate of $5 if more favorable to him than the rate assessed under the ordinary scale for medical officers; while an officer who has retired as a major since Sept. 13, 1919, after completing twenty years' service, will be entitled to benefit under this provision, with effect from the date of retirement.

Improvements have also been made in the conditions of service and emoluments of medical officers of the royal air force. The air council attaches great importance to attracting into the service the best type of physician, since on the capacity of the medical service depends to a peculiar degree the safety and efficiency of the air force. The duties of a physician in the air force include not only the prevention and treatment of those ordinary diseases to which the personnel of any fighting service is liable, but the special study of the mental and physical stresses imposed on the airman in diverse circumstances and climates—a branch of medicine with which the civil profession has heretofore had but little experience. The work to be done, therefore, has a high professional interest, and with the improved conditions it is hoped that applicants of the best quality will be forthcoming. Entry into the medical branch is by means of a short service commission for three years on the active list, extensible to five years. Entry into the service, therefore, does not commit the entrant to a permanent career, but leaves him free to return to the civil profession and the service free to choose the best officers for retention. Permanent commissions are granted by selection to officers holding short service commissions, and in order that all short service officers who desire to remain in the service may have a reasonable opportunity of doing so it has been decided that, so far as practicable, every entrant shall have 50 per cent of a permanent commission. Further, in order to assist short service officers who pass to the reserve after five years to set up in private practice, the gratuity issuable on leaving the active list has been increased to $3,500, the gratuity after three years' service remaining at $1,750 as heretofore. The gratuities on retirement have been increased to $7,500 after ten years' service and $12,500 after fifteen years' service. After twenty years' qualifying service, officers are eligible for retired pay, the amount depending on age and length of service and, in the case of senior officers, on rank. The maximum rates of retired pay are, for air vice marshal, $5,050 instead of $4,770.50; air commodore, $4,750 instead of $4,490.50; group captain, $4,500 instead of $4,250.50; wing commander, $3,000 instead of $2,835; squadron leader, $2,500 instead of $2,360.50.

With a view to attracting into the service graduates who have had the valuable experience provided by a hospital appointment, it has been decided, subject to certain conditions, to allow physicians who have held a resident appointment in a recognized civil hospital for not less than one year—of which, however, half may have been spent in a nonresident appointment—to enter the air force with one year's antedate counting for purposes of seniority, promotion, retired pay and retiring gratuity. Every officer on entry will in future receive eight weeks' instruction in the medical problems connected with flying and in his other air force duties. With a view to enabling medical officers to take at least one general or specialist course at a civil or a service medical school, it has been decided to allow study leave up to nine months in all to officers during the first sixteen years of their service.

Control of Dangerous Drugs

The home secretary proposes to make regulations amending the dangerous drugs regulations. The principal effect of the new regulations is to carry out the recommendations contained in the report of the ministry of health committee on morphine and heroin addiction, published last February. Pharmacists are required to keep their stocks of dangerous drugs under lock and key. If the home secretary is of opinion that there is reason to think that a physician may be supplying, administering or prescribing any of the drugs either to or for himself or to or for other persons otherwise than as required for purposes of medical treatment, he may refer the case to a tribunal, and if the tribunal so recommends, the home secretary may withdraw the authorization of such physicians to be in possession of or to supply the drugs, and may cancel his right to dispense such drugs.

Failure to Prevent Disease

Preventable disease is not being prevented, and remediable disease and invalidity are not being adequately treated, is the complaint of Sir George Newman, chief medical officer of the ministry of health, in "An Outline of the Practice of Preventive Medicine," issued as a government publication. Among the criticisms made against the present system, he mentions a lack of correlation of medical knowledge gained and a lack of appreciation of the precise problems to be solved and the ways and means by which they may be faced. He declares that while it is true that the death rate is declining and decimating scourges and famines are a thing of the past, at least as regards the British Isles, we cannot escape from the conclusion that there remains a serious amount of preventable sickness and avoidable disablement, the tendency of which must be to undermine the physical stamina of the people and reduce their capacity. Moreover, the nation is slow to realize the vast mass of disability and incompetence that results from widespread maladies, usually regarded as trivial and negligible, which may not reach the physician, such as anemia, dyspepsia, constipation, septic wounds, accidents, colds, chilblains, eyestrain, and dental inefficiency.

Rockefeller Medical Fellowships Tenable in the United States

The medical research council, on behalf of the Rockefeller Foundation, has made the following awards of medical fellowships provided by the foundation, and tenable in the United States during the academic year 1926-1927: Geoffrey Bourne, M.D. (London), M.R.C.P., first assistant in the medical unit, St. Bartholomew's Hospital, London; Hugh William Bell Cairns, M.B. (Adelaide), F.R.C.S., assistant surgeon, London Hospital; Miss Rosalie Eveleyn Lucas, M.B. (Bristol), clinical assistant, Maudsley Hospital, London; Ronald Douglas Mackenzie, M.D. (Edinburgh), M.R.C.P.Ed., lecturer in pathology, University of Edinburgh; Carl Frederick Abel Pantin, M.A. (Cambridge), assistant physiologist, Marine Biological Laboratory, Plymouth; Arthur Frederick Bernard Shaw, M.D. (Trinity College, Dublin), F.R.C.P.I., lecturer in pathology, University of Durham; James Calvert Spence, M.D. (Durham), M.R.C.P., medical registrar and chemical pathologist, Royal Victoria Infirmary, Newcastle-on-Tyne, and Harry Ellis Carter Wilson, M.B. (Glasgow), assistant in chemical physiology, University of Glasgow.

The Museum of the Royal College of Surgeons

The post of pathologic curator to the museum left vacant by the death of S. G. Shattock has been filled by the appointment of Mr. C. F. Beadles, who had long been connected with the museum, assisted Professor Shattock in forming the great collection illustrating general pathology, and was mainly instrumental in the formation of the war collection. Excepting a certain number of dry specimens, the whole of the collection has been arranged and catalogued and may be considered to be complete. Mr. Beadles is now engaged on the series of special pathology, and the revision and rearrangement of this collection, commenced by Professor Shattock, has made considerable progress, embracing the specimens of the cutaneous, locomotor and nervous systems, and those of the heart and pericardium. Among the additions in the past year to the pathologic and teratologic collections, several are of unusual interest. The heart of a new-born child shows complete obliteration of the aortic orifice, the sole communication between the left ventricle and the aorta being through a greatly enlarged anterior descending coronary artery, which at its lower end expands into a cyst communicating with the apex of the ventricular cavity. An almost identical abnormality of the coronary artery is from an ox; but in it the orifice of the aorta is normal. A general dilatation of the esophagus of a dog above a tight stricture is due to compression in a ring formed on the one side by a right aortic arch and on the other by the normally placed pulmonary artery and ligamentum arteriosum. There is a tumor recoved from the pleura, which has received the name of lipofibrosarcoma or lipoplastic sarcoma, characterized by extensive tracts of fat cells of the embryonic type. An invagination of the wall of the ileum, due to a submucous lipoma through the valve, resembles closely the best sausage shape of an intussusception. The series of human osteology has a cast of the Galilee skull. The original specimen was excavated from a cave near the Sea of Galilee; it is of the Neanderthal type (as mentioned in a previous letter) and is the first example of that type found outside the limits of Europe. Another important addition is a cast of the recently excavated "London" skull considered by Sir Arthur Keith to be the oldest trace of the human body yet discovered in the Thames valley. The president, Sir John Bland-Sutton, has given a specimen of the Mexican ligature ant (*Eciton hamatum*). The living animal is used by the natives as a kind of animated Michel's clip in the suturing of wounds. When applied to the wound, it grips the edges with its two powerful mandibles. The body is then cut away, leaving the head in situ; the prolonged contraction of the mandibular muscles effects a permanent closure of the wound.

Fans in Cotton Factories

The industrial fatigue research board, following an experiment made for the departmental committee on humidity in cotton weaving, has issued a report which states that the cooling power of the air and bodily comfort of the operatives were considerably increased by the particular arrangement of the fans adopted. Without fans, the cooling power of the air never reached the minimum standard considered necessary for workers engaged in sedentary occupations. The increased air movement produced by the fans had no significant effect on the number of warp breakages on the looms in their immediate vicinity. There were indications that the output on the looms affected by the fans was somewhat higher on the days when the fans were running. The highest output was obtained when the temperature was from 72.5 to 75 F., and the relative humidity from 75 to 80 per cent.

BUCHAREST

(From Our Regular Correspondent)

July 5, 1926.

Incontinence of Urine, and Adenoids

In a recent lecture before the Medical Society of Bucharest, Dr. Munteanu said that little mention is made of the part played by adenoids in causing nocturia in children. Despite the pioneer work of Major and Baumgarten, it was not until Freyberger published a report of his eighty-six cases and Fischer reported his investigations that the relation between adenoids and nocturia was recognized. The urine in such cases is passed in a stream, and only during sleep, or when the child is half awake. There seems to be a reflex irritation of the longitudinal muscle fibers of the bladder, the action of which is stronger because voluntary control of the sphincter is in abeyance during sleep. Etievant's theory is that the deficient oxidation of the blood in children, whether brought about by adenoids or by other nasal obstructions, produces anemia, headache, nightmare, and, by a reflex action, nocturnal incontinence. There is some clinical foundation for Etievant's idea. In some cases in which removal of the adenoids did not produce satisfactory results, the nasal respiratory tract was in part occluded by polyps. Removal of these was immediately followed by cessation of nocturia. The effect does not always follow quickly after the operation; in Etievant's cases fifteen days elapsed before the desired result was obtained.

Genital Tuberculosis

At a meeting of the Czernovitz Medical Society, Dr. Mayer stated that women in whom the genital organs are active in menstruation, conception and labor appear to have a special predisposition to genital tuberculosis. Gonorrhea, syphilis and puerperal septic processes favor the disease by setting up dystrophic conditions and hypoplasia. Genital tuberculosis is therefore generally secondary, but the incidence of the primary type is about 18 per cent. In 350 gynecologic cases were twenty-one in which the disease could be proved. The indefiniteness of the symptoms was striking. Some were led to seek advice by accidental causes. Some spoke of wasting, vague abdominal pains and irregular menstruation. Examination of the genital tract usually disclosed nothing. The extraordinary intensity of the caseating process was remarkable. This was strikingly so in the case of a robust looking girl who thought she was pregnant. Even through the abdominal wall thick, nodular masses could be felt. She was not pregnant. The whole omentum and peritoneum were strewn with nodules, the size of a plum, and only a few parts of the peritoneum were intact.

Malpractice Action Against a Factory Surgeon

At the county court of a large provincial town in Transylvania, a factory surgeon was accused of negligent and unskilful treatment. The plaintiff's ankle was badly bruised about a year ago. The foot was much swollen, and it was some time before the surgeon could diagnose the injury. The surgeon finally advised the patient to go to the state hospital in Cluj, where roentgen-ray examination revealed dislocation of the ankle and other injuries. Eventually the plaintiff was operated on at Bucharest, where the surgeon stated that any practitioner with ordinary care could have reduced the dislocation immediately after the accident, and that the swelling would not have been so great as to preclude the possibility of a definite diagnosis. This statement, if correctly reported, certainly does not agree with the average surgical experience, says the *Medic Practicant*, a medical journal appearing in Roumania. A clinical surgeon is the last man in the world, says the journal, we should have expected to make dogmatic assertions of this kind. Another expert stated that the defendant was not at all culpable, and the physician was acquitted.

RIO DE JANEIRO

(From Our Regular Correspondent)

June 15, 1926.

Retrogasserian Neurotomy in Trifacial Neuralgia

Dr. M. Santos recently reported to the Medical and Surgical Society the case of a patient who had been suffering for ten years with tic douloureux. A number of drugs, quinine, methylene blue, mercury, neo-arsphenamine, as well as alcohol injections and sections of the infra-orbital, mental and supra-orbital nerves, achieved only temporary relief. Santos first performed sympathectomy of the superior cervical ganglion, as the patient feared trephining and previous neurectomies had yielded no results. The effect of sympathectomy proved also transitory, and besides it caused exophthalmos, myosis, retraction of the palpebral opening and onesided facial congestion. A retrogasserian neurotomy, however, proved most successful. The only complication was a rebellious bleeding from an anastomosis of the ophthalmic vein, which caused several minutes' delay before it was controlled.

Sapucainha Oil in Leprosy

Dr. A. Machado discussed before the Medical and Surgical Society both from chemical and therapeutic standpoints -sapucainha (*Carpotroches braziliense*) oil in the treatment of leprosy. This oil apparently has all the properties of chaulmoogra oil. It contains carpotrochic and carpotrochinic acids. The structural form of these acids suggests that sapucainha oil should be even stronger than chaulmoogra oil. Machado has extracted the esters of sapucainha oil and used them in the treatment of leprosy at the Minas hospitals.

BELGIUM

(From Our Regular Correspondent)

June 26, 1926.

Organization and Results of the Crusade Against Syphilis

M. Bayet has presented to the Academy of Medicine of Belgium a communication on the organization and results of the crusade against syphilis. Bayet holds the view that syphilis is retrogressing at a rate which justifies the belief that it will eventually disappear from the world. Prophylaxis by means of widespread treatment has been the point of departure. To decrease by three fourths or four fifths the duration of the contagious period of syphilis is the same thing, as far as dissemination is concerned, as if one decreased by three fourths or four fifths the number of contagious syphilitics. The prophylaxis of venereal diseases must consist, therefore, primarily in rendering the disease carriers noninfective. This must be accomplished through better and more treatment. Such prophylaxis requires the cooperation of the whole medical profession. It was necessary to a great extent to furnish drugs and medical care gratuitously.

The public health service has devoted large sums of money to the work. The Ligue nationale belge contre le péril vénérien carried on a publicity campaign (lectures, talks, motion pictures, etc.). The results, moreover, are to be seen on every hand. In the army, syphilis, which reached its height during the years 1918, 1919 and 1920, has decreased regularly since 1921, until now the number of new cases developing is almost nil. Recent syphilis, in other words, is decreasing from year to year and is tending to disappear entirely. Also among the civil population the proportion of recent cases of syphilis compared to the total number of syphilis cases has greatly diminished. The proportion in 1920 was 25 per cent and for 1923, 12 per cent. In Brussels the decrease has been even more marked—from 23 per cent to 9 per cent. In Antwerp, the percentage in 1920 was 34 per cent and in 1925, 16 per cent. In Liége the percentage has fallen from 34 per cent in 1919 to 12 per cent in 1924.

The Twenty-Fourth Flemish Congress of Medicine

As in preceding years, the Flemish Congress of Medicine was held as an independent section of the Flemish Congress of Natural and Medical Sciences.

Infant Mortality

The Oeuvre nationale de l'enfance has published statistics showing the infant mortality in each commune of Belgium for the years 1919 to 1923. The statistics show a constant lowering of the birth and the death rates of children under 1 year of age, the diminution being more marked in certain provinces and districts than in others. The figures heretofore published do not show the districts in which the infant mortality has been stationary or high and thus do not encourage endeavors to discover the causes for the existing state of affairs.

An Ocular Graft

Before the Société belge d'ophthalmologie, Drs. Weekers and Lambrecht presented observations on a workman who suffered accidental complete avulsion of one eye. The eye was immediately replaced in the socket. Nutrition of the eyeball was reestablished, and nothing in its external appearance betrays the fact that it is not a perfect eye. Visual functions, however, are entirely abolished.

Preventive Medicine

As a result of the public meeting organized by the Société belge d'eugénique on the subject of a medical examination preparatory to marriage, the Policlinique du Parc Léopold has agreed to establish a consultation center of preventive medicine, under the direction of Dr. Albert Govaerts.

Opening of the Urologic Clinic at the University of Brussels

In a previous letter the establishment of a clinical chair of urology at the University of Brussels was mentioned. Dr. de Smeth, the present incumbent, recently gave the introductory lecture, in which he praised the work of Dr. Leclerc Dandoy, who was one of the founders of the Ligue nationale contre le péril vénérien.

Death of Professor Henseval

Dr. Henseval, professor of hygiene and bacteriology at the University of Ghent, has died unexpectedly. He was a member of the Royal Academy of Medicine and also of the Conseil supérieur de l'hygiène. He was likewise director of the bacteriologic services in eastern Flanders.

GENEVA

(From Our Regular Correspondent)

July 7, 1926.

Infectious Aneurysm

From the Institute of Pathology of the University of Lausanne comes an interesting study of three cases of infectious aneurysm carried out by Dr. M. Secretan. The first case was of a woman, aged 18, who presented at necropsy a small aneurysm of the aorta undergoing healing. Necrosis was slight and fibroplastic reaction marked; polymorphonuclear leukocytes were few, there were many lymphocytes and plasma cells, and proliferation of the endothelium had taken place. There was a history of acute articular rheumatism. Secretan's second patient was a man, aged 32. Necropsy revealed ulcerative endocarditis of the aorta and mitral valve, a false aneurysm of the right inferior gluteal artery, and aneurysm of the aorta. The aortic valve presented endocarditis, and Secretan supposes that a vegetation of this valve infected by contact the corresponding aortic wall before becoming detached and embolizing the gluteal artery. The aneurysm must have developed intermittently, each increase in size corresponding to attacks of sudden violent pain observed clinically. The infectious origin of this aneurysm and the primary seat of the infection seem to be clearly established by the presence of streptococci both in the aortic valves and in the aneurysm. The third case was another example of infectious aneurysm of the heart. It originated in the aorta and predominated in the right sinus of Valsalva. There was also a perforating aneurysm of the interventricular septum, which leads Secretan to attribute great importance to diastolic reflux; the manifest aortic insufficiency at the time of the diastole threw the detached infected bits from the aortic valve against the interventricular septum on account of the reflux of the column of blood, and these, becoming grafted on it, resulted in the production of a parietal endocarditis.

Adenomyoma of Gallbladder

Dr. L. Nicod has studied four cases of adenomyoma of the gallbladder at the Institute of Pathology of the University of Lausanne. There was no mention made of any former symptoms of gallbladder disease. Three of the subjects were over 50 years of age, and one was 19. The seat of the neoplasm was the fundus in all four. The histologic elements of all four growths were glandular formations lined with cylindric epithelium secreting mucus. No trace of malignant proliferation could be detected. In two cases there was absolutely no trace of chronic inflammation either in the tumor or in other parts of the gallbladder. In the third case there was a diffuse lymphocytic infiltration confined distinctly to the growth. The fourth case presented a lymphocytic infiltration, but at the periphery of the growth and in other parts of the wall of the gallbladder there were signs of chronic inflammation. Three subjects had other neoplasms, of either the epithelial or the connective tissue structure. One had a cancroid of the esophagus and a lipoma of the neck. In the third subject there was a gelatinous carcinoma of the colon, a hypernephroma of the left kidney, hemangioma of the liver, and a fibroma on the back of the left foot. The fourth case presented hypertrophy of the prostate. Nicod, by his histologic examinations, shows that inflammation of the gallbladder is unimportant in the causation of these tumors, and points out that these growths are extremely rare while the gallbladder is a common seat of inflammatory processes. Certain individuals, according to Professor Meyersburg of Lausanne, offer a predisposition to tumor growth anywhere in the body; and Nicod points out that in his cases, the tissues possessed the property of reacting to irritations by proliferation of the epithelium.

BUENOS AIRES

(From Our Regular Correspondent)

May 30, 1926.

A Surplus of Physicians

The Institute of Psychotechnics and Professional Orientation has published the results of an investigation into teaching questions. About 60 per cent of college graduates choose a medical career. In spite of the entrance examinations, which discard from 40 to 60 per cent of applicants, the number of medical students in Argentina has more than doubled in the last decade, rising from 3,695 in 1915 to 8,137 in 1924. The population has increased only from 8,000,000 to 9,600,000 during the same period. In spite of the difference in size, there are in this country half as many medical students as in the United States. The useless expenditure of money, loss of time, purposelessness and disappointment caused by a great number failing to finish the course should be avoided by better organization. Incidentally, the large number of students prevents their getting the necessary practical training. The consequences of excessive output become increasingly serious. At Buenos Aires there is a physician for every 750 inhabitants. As many are not able to secure an adequate practice, they seek either government posts or teachers' positions.

In order to obtain a medical degree, an applicant must devote at least seventeen years to study, and spend in his six year course in medicine proper about 14,800 pesos (about $6,040).

Vital Statistics

The Argentine birth rate has decreased 13.6 per cent, from 38.2 per thousand (1910-1913) to 33 per thousand (1920-1924). The death rate also decreased from 17.5 per thousand to 14.9 per thousand during the same period. The 1920-1924 marriage rate has risen again to the 1910-1913 figures, 7.2 per thousand. The growth of the population has decreased 12.2 per cent: from 20.7 per thousand (1910-1913) to 18.2 per thousand (1920-1924).

National Academy of Medicine

Dr. M. Torino has been appointed president of the National Academy of Medicine. A recent meeting was devoted to a tribute to Prof. A. Doleris, a corresponding member.

Health Department

The director of the national department of health, Prof. G. Araoz Alfaro, has left for Europe, to attend the international sanitary conference at Paris. Dr. Tiburcio Padilla, Jr., is filling his place during his absence.

Prize for Work on Electrocardiography

The 1924 first national prize for "sciences" has been granted to Dr. Tiburcio Padilla, for his book on electrocardiography. The value of the prize is 30,000 pesos (about $12,250).

BERLIN

(From Our Regular Correspondent)

June 19, 1926.

The Decrease in the Birth Rate in Germany and France

Before the Berliner Gesellschaft für öffentliche Gesundheitspflege, Professor Grotjahn delivered an address on the topic "What is France doing and what is Germany doing to prevent a decrease in the birth rate?" Although Germany has an excess of births over deaths, it is only because, during the war, so many persons were killed and because, later, so many died before the normal time. In a few years, the mortality figures will again increase, but the birth rate may go down still lower, just as it has been falling for many decades, quite independently of the wars. The fall in the birth rate is the result of birth control, which, arising among the French, has spread to Germany, Scandinavia, Switzerland, England, America and Australia, whereas, among the Slavic population, the birth rate is still high. If we retain as good an average age as existed before the war; namely, around 50 years, we then need twenty births per thousand of population to preserve the status quo. The birth rate in Berlin in 1925 was only 11.8. Napoleon I figured the need of six children to the family, two to replace the parents, one to constitute a reserve of population, while three would die. Modern statisticians consider that for the preservation (not the increase) of a population, every fruitful marriage should produce from three to 3.5 children.

Even before the war, France passed a law that, from the third child on, communal aid must be granted persons without means. More recent laws guarantee further aid. In Germany, however, nothing has been done, to speak of, to encourage large families. Yet even in France the last census gave a smaller population than it had before the war, in spite of the accession of Alsace-Lorraine and of the nearly three million foreigners living in France. This shows, too, that reduction in the birth rate does not exert a favorable effect on unemployment. It serves merely to attract foreign cheap man power. Germany's birth rate has already been reduced almost to that of France without signs of its being soon checked in its downward plunge. In 1900, Germany had a birth rate of 35 per thousand; in 1924, it had dropped to 20.4. France, in 1900, had a low birth rate of 21.3; and in 1924 it had not fallen much further (19.4). In Germany the decline in births is not confined to the cities. Only recently, a teacher in Uckermark (among others) announced, as the result of his investigation, that in his village there were only 2.2 children born per family.

What Constitutes a Race of Mankind?

In a lecture before the Berlin Anthropologic Society, Prof. Hans Friedenthal rejected the definition that a race is a circumscribed portion of the population with certain more or less uniform qualities. The mere marshaling together of a group of persons according to certain common peculiarities does not justify any conclusions as to what extent the peculiarities constituting the basis for such classification are really essential. For instance, a deeply tanned European may have the same hue of skin as a native of the tropics, but the European will have white children, while the native of the tropics will have brown children. A race, then, is a group of individuals with a well marked similarity in their genotype.

How, then, did the various races of mankind originate? Domestic animals are raised in such a manner that certain definite qualities will, in the course of generations, gain the ascendancy over other qualities. Human beings, however, have probably never been raised artificially, to any great extent.

As external factors in the origin of species, Friedenthal has proposed climate, migration, character of the vegetation, struggle for existence, and other causes. The conditions with respect to man are not unlike those under which races of wild animals develop in their native habitat. The pictures that he introduced in support of his views were impressive. He brought out that many wild animals present traits that are commonly supposed to be confined to domestic animals. On the other hand, some human beings present qualities that we do not expect to find other than in animals. For instance, some wild animals do not have as much hair covering as most races of mankind. Then there are spotted men—*Elster,* or magpie, negroes so called—and Papuans (New Guinea), who have markings on their bodies resembling the fly-like spots on certain of our white horses *(Fliegenschimmel).* Europeans and chimpanzees, negroes and gorillas, mongolians and orang-utans are respectively similar to one another not only in the development of their skulls, as regards length, height and breadth, but also in the color of the skin. In addition, it seems more than likely that these three groups had in very ancient times respectively the same habitat. That, of course, does not signify that man is sprung from the ape but it is rather to be assumed that both had a common progenitor, which transmitted certain of his attributes or qualities to his anthropoid descendants and certain others to man.

A race relationship is established by comparison of various hereditary qualities. There is, however, some difficulty in deciding which qualities are essential and which are nonessential. The gibbon, of the several species of anthropoid apes, has the closest blood relationship to man, since its blood gives the most similar biologic reaction; and, strange as it may seem, the species of louse that infests the gibbon has the greatest similarity to human lice. However, from the standpoint of external body structure and endowments the gibbon does not resemble man so closely as does the chimpanzee. But the blood test of the chimpanzee does not indicate so close a degree of relationship as does the gibbon, while, as to lice, he is not infested. A comparison of fetuses often gives different results than researches on animals and human beings after birth.

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Deaths

Francis Romeyn Lyman ⊕ Hastings Upon Hudson, N. Y.; Medical Department of the University of the City of New York, 1893; past president of the Westchester County Medical Society; served during the World War; for many years president of the school board; health officer of Hastings Upon Hudson for more than thirty years; on the staff of the Dobbs Ferry (N. Y.) Hospital; aged 56; died suddenly, July 3, of heart disease.

Carle Edwin Bentley ⊕ Little Rock, Ark.; University of Arkansas Medical Department, Little Rock, 1895; Bellevue Hospital Medical College, New York, 1897; professor of clinical surgery at University of Arkansas Medical Department; Spanish-American War veteran; on the staffs of the Pulaski County Hospital and St. Vincent's Infirmary, where he died, June 30, aged 30, aged 53, of pneumonia.

Samuel Breck Ackley ⊕ Oconomowoc, Wis.; Rush Medical College, Chicago, 1892; secretary of the Waukesha County Medical Society; proprietor of the Oconomowoc Sanatorium, and formerly on the staff of the Waukesha (Wis.) Sanatorium; aged 59; died, June 22, at the Summit Hospital, of intestinal obstruction.

William S. Fast ⊕ Ingleside, Neb.; Ensworth Medical College, St. Joseph, 1893; member of the American Psychiatric Association; superintendent of the Hastings State Hospital, Ingleside, and formerly superintendent of the Nebraska Institution for the Feebleminded, Beatrice; aged 60; died, June 27, of pulmonary edema.

Edward W. Mooney ⊕ Detroit; Detroit College of Medicine and Surgery, 1899; at one time associate professor of medicine at his alma mater; member of the American College of Physicians; formerly on the staff of the St. Mary's Hospital; aged 53; died, June 20, of pernicious anemia.

James B. Roe, Newark, Ark.; University of Arkansas Medical Department, Little Rock, 1904; member of the Arkansas Medical Society; past president and secretary of the Independence County Medical Society; aged 51; died suddenly, June 17, of heart disease.

Harry Mower Lee, New London, Conn.; Medical Department of Columbia College, New York, 1898; member of the Connecticut State Medical Society; served during the World War; aged 51; died, June 24, at his home in Waterford, of heart disease.

Donavan Robeson, Greenville, Ohio; Medical College of Ohio, Cincinnati, 1870; Bellevue Hospital Medical College, New York, 1874; member of the Ohio State Medical Association; aged 85; died, July 12, at Ann Arbor, Mich., of pneumonia.

Robert M. Quig, East Waterford, Pa.; Jefferson Medical College of Philadelphia, 1875; member of the Medical Society of the State of Pennsylvania; aged 70; died, April 10, at the Harrisburg (Pa.) Hospital, of pyloric stenosis.

Frank Monroe Floyd ⊕ St. Louis; Marion-Sims College of Medicine, St. Louis, 1897; on the staffs of the Frisco, Lutheran and St. Louis Baptist hospitals; aged 60; died, July 10, of acute intestinal obstruction.

Joseph H. Lowrey, Neola, Iowa; Pulte Medical College, Cincinnati, 1883; member of the Iowa State Medical Society; aged 67; died, May 19, at Rochester, Minn., of peritonitis, following an operation for adhesions.

John Lewis Washburn ⊕ Youngstown, Ohio; University of Buffalo Department of Medicine, 1903; member of the Pittsburgh Ophthalmological Society; aged 51; died, June 21, of acute nephritis and rheumatic fever.

Emil T. Dippell ⊕ Huntington, Ind.; Jefferson Medical College of Philadelphia, 1897; member of the Central States Pediatric Society; aged 51; died, July 11, at St. Joseph's Hospital, Fort Wayne, of sinusitis.

Francis Patterson Morgan, Washington, D. C.; Columbia University College of Physicians and Surgeons, 1893; served during the World War; aged 59; died, July 4, of myeloencephalitis, following influenza.

George Alvis Waters, Pawnee, Okla.; University of Arkansas Medical Department, Little Rock, 1890; member of the Oklahoma State Medical Association; aged 60; died recently, of cerebral hemorrhage.

Edgar R. Perkins, Milwaukee; Hahnemann Medical College and Hospital, Chicago, 1868; Civil War veteran; aged 89; died, June 22, at the National Soldiers' Home, of valvular heart disease.

Flora Alice Read, Fon du Lac, Wis.; Northwestern University Woman's Medical School, Chicago, 1895; aged 62; died, June 25, at the home of her brother in Elgin, Ill., of chronic nephritis.

Amos W. Bennett, Williamsport, Pa.; Louisville Medical College, 1892; member of the Medical Society of the State of Pennsylvania; aged 73; died, April 23, of septic sore throat.

James P. Prestley ⊕ Newton, Ill.; Rush Medical College, Chicago, 1886; president and formerly secretary of the Jasper County Medical Society; aged 65; died, June 20, of uremia.

Thompson Flournoy Worthington, Glen Allan, Miss.; Medical Department of the Tulane University of Louisiana, New Orleans, 1902; died, April 21, of carcinoma of the stomach.

Clarence Mauritz Froid, Denver; Denver and Gross College of Medicine, 1905; served during the World War; aged 44; died, June 28, of sinusitis and cirrhosis of the liver.

Strodder U. King, Little Rock, Ark.; University of Louisville School of Medicine, 1886; member of the Arkansas Medical Society; aged 73; died, June 20, of dysentery.

Gordie C. Patton ⊕ Camden, N. J.; Jefferson Medical College of Philadelphia, 1915; connected with the U. S. Veterans' Bureau; aged 39; died, June 29, of heart disease.

Abraham PerLee Pease, Massillon, Ohio; University of Wooster Medical Department, Cleveland, 1871; Civil War veteran; aged 79; died, June 26, of heart disease.

William Snearer, East Cleveland, Ohio; Cleveland Medical College, 1897; Cleveland College of Physicians and Surgeons, 1899; aged 67; died, June 23, of heart disease.

George Losekam, Takoma Park, Md.; Baltimore Medical College, 1897; aged 56; died, July 1, at the Georgetown University Hospital, of gangrene of the legs.

Samuel H. Pinkerton ⊕ Salt Lake City, Utah; Bellevue Hospital Medical College, New York, 1883; aged 69; died in June, at Los Angeles, of pernicious anemia.

John Hall Gernon, Kankakee, Ill.; Rush Medical College, Chicago, 1872; member of the Illinois State Medical Society; aged 75; died, June 19, of heart disease.

Raymond Bedfort Lockridge, White Pine, Tenn. (licensed, Tennessee, 1919); served during the World War; aged 35; died, June 18, of cerebral hemorrhage.

Biddle R. Marsden ⊕ Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1885; aged 62; died suddenly, June 22, of heart disease.

George P. Cline, Byron, Ga.; University of the South Medical Department, Sewanee, Tenn., 1899; aged 52; died, June 30, of cerebral hemorrhage.

Theodore Harcum, Brown Valley, Minn.; Hahnemann Medical College and Hospital, Chicago, 1886; aged 70; died, June 9, of cerebral hemorrhage.

Frank L. Horning ⊕ Merchantville, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1889; aged 64; died, June 29.

Leonard O. Ulving ⊕ Elgin, Iowa; Medico-Chirurgical University, Lund, 1913; Chicago Medical School, 1921; aged 36; died, June 4.

Albion Jason Marston ⊕ Belle Vernon, Pa.; University of Pittsburgh School of Medicine, 1906; aged 47; died, June 21, of tumor of the brain.

Charles W. Umbarger, Gassaway, W. Va.; University of Louisville School of Medicine, 1911; aged 44; died, May 19, of heart disease.

James William Cave ⊕ Wichita, Kan.; Kentucky School of Medicine, Louisville, 1892; aged 57; died, April 26, of heart disease.

Harry Eugene Kerch ⊕ Dundee, Ill.; Chicago Homeopathic Medical College, 1892; aged 58; died, June 27, of cerebral hemorrhage.

Harvey Read Noble, Shiloh, Ohio; Jefferson Medical College of Philadelphia, 1888; aged 63; died, June 21, of heart disease.

John George Marchand, Hannibal, Mo.; St. Louis University School of Medicine, 1924; aged 28; was drowned, June 20.

Idus Carl Deariso, Atlanta, Ga.; Atlanta School of Medicine, 1913; aged 48; died, June 22, of cardiorenal disease.

William D. Morgan, Charleston, Ill.; Chicago Medical College, 1879; aged 70; died, April 15, of heart disease.

William Frank Cooper, Munford, Tenn. (licensed, Tennessee, 1889); aged 72; died, June 2, of cholelithiasis.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

MURARSENIDE NOT ACCEPTABLE FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.
W. A. Puckner, Secretary.

"Murarsenide" is the noninforming name applied by the Miller Biological Laboratories, Los Angeles, Cal., to a solution marketed in the form of ampules, claimed to contain in each 10 cc. (one ampule): sodium dimethylarsenate (sodium cacodylate), 0.7 Gm. (10.5 grains); mercuric oxycyanide, 0.004 Gm. (1/16 grain); and sodium iodide, 0.5 Gm. (7.5 grains). The preparation is proposed for the treatment of syphilis and is to be administered intravenously.

The advertising leads to the inference that "Murarsenide" presents an advance in the therapy of syphilis and that the arsenic compound contained in it is an advance over arsphenamine. The trade circular states "It [Murarsenide] carries a greater arsenic content in a more available form than do the arsenobenzol [Arsphenamine] products." Thus it is claimed:

> "In the preliminary researches of clinical application of this new intravenous arsenical, we have succeeded in eliminating the toxic reactions, have increased and made more available the arsenic content, have eliminated the tedious and necessarily detailed technique of administration and have made possible the elimination of supplementary treatment by including in this material organic mercury in the form of oxycyanide in combination with sodium iodide."
>
> "On account of its high available arsenic content, its combination with mercury and iodine and its nontoxic character, brilliant results are being manifest by its use."

These claims are unwarranted. Preparations containing sodium cacodylate, a salt of mercury and an alkali iodide proposed for the intravenous treatment of syphilis, have been marketed for many years;[1] sodium cacodylate has been shown to be inefficient in the treatment of syphilis;[2] and there is no rational basis for the simultaneous administration of arsenic, mercury and iodide in the treatment of syphilis. The trade circular stated:

> "Murarsenide is also indicated in such conditions as trypanosomiasis, malaria, amoebiasis, localized bacteremias, bacilliary dysentery, flagellosis and as a general systemic tonic. Its parasiticidal merits are evident."

No evidence of any kind is offered in support of these claims.

Murarsenide is inadmissible to New and Nonofficial Remedies because it is an unscientific pharmaceutical mixture marketed with misleading statements of composition, under a noninforming name and with unwarranted therapeutic claims.

PHENOSEPTINE POWDER AND PHENOSEPTINE CONES NOT ACCEPTABLE FOR N. N. R.

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The Council has authorized publication of the following report.
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Phenoseptine Powder and Phenoseptine Cones are marketed by the Mertes Remedy Co., San Francisco, Cal. Phenoseptine Powder is stated to have the following composition: "Boracic Acid 75 per cent.; Zinc Phenolsulphonate 18 per cent; Phenol, Menthol, Thymol and Eucalyptol 7 per cent." The amounts of Phenol, Menthol, Thymol and Eucalyptol

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[1] Venarsen Not Admitted to N. N. R., Report of the Council on Pharmacy and Chemistry, The Journal, May 22, 1915, p. 1780; Herradora Specialties Not Accepted for N. N. R., Report of the Council on Pharmacy and Chemistry, ibid., April 28, 1923, p. 1259; Intravenous Specialties, ibid., Dec. 21, 1921, p. 1912.

[2] Nichols, H. G.: Salvarsan and Sodium Cacodylate, The Journal, Feb. 18, 1911, p. 492; Cole, H. N.: A Study of Sodium Cacodylate in the Treatment of Syphilis, ibid., Dec. 30, 1916, p. 2012; The Pharmacology of Arsenicals, ibid., Feb. 28, 1921, p. 595.

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Samuel Breck Ackley ⊕ Oconomowoc, Wis.; Rush Medical College, Chicago, 1892; secretary of the Waukesha County Medical Society; proprietor of the Oconomowoc Sanatorium, and formerly on the staff of the Waukesha (Wis.) Sanatorium; aged 59; died, June 22, at the Summit Hospital, of intestinal obstruction.

William S. Fast ⊕ Ingleside, Neb.; Ensworth Medical College, St. Joseph, 1893; member of the American Psychiatric Association; superintendent of the Hastings State Hospital, Ingleside, and formerly superintendent of the Nebraska Institution for the Feebleminded, Beatrice; aged 60; died, June 27, of pulmonary edema.

Edward W. Mooney ⊕ Detroit; Detroit College of Medicine and Surgery, 1899; at one time associate professor of medicine at his alma mater; member of the American College of Physicians; formerly on the staff of the St. Mary's Hospital; aged 53; died, June 20, of pernicious anemia.

James B. Roe, Newark, Ark.; University of Arkansas Medical Department, Little Rock, 1904; member of the Arkansas Medical Society; past president and secretary of the Independence County Medical Society; aged 51; died suddenly, June 17, of heart disease.

Harry Mower Lee, New London, Conn.; Medical Department of Columbia College, New York, 1898; member of the Connecticut State Medical Society; served during the World War; aged 51; died, June 24, at his home in Waterford, of heart disease.

Donavan Robeson, Greenville, Ohio; Medical College of Ohio, Cincinnati, 1870; Bellevue Hospital Medical College, New York, 1874; member of the Ohio State Medical Association; aged 85; died, July 12, at Ann Arbor, Mich., of pneumonia.

Robert M. Quig, East Waterford, Pa.; Jefferson Medical College of Philadelphia, 1875; member of the Medical Society of the State of Pennsylvania; aged 70; died, April 10, at the Harrisburg (Pa.) Hospital, of pyloric stenosis.

Frank Monroe Floyd ⊕ St. Louis; Marion-Sims College of Medicine, St. Louis, 1897; on the staffs of the Frisco, Lutheran and St. Louis Baptist hospitals; aged 60; died, July 10, of acute intestinal obstruction.

Joseph H. Lowrey, Neola, Iowa; Pulte Medical College, Cincinnati, 1883; member of the Iowa State Medical Society; aged 67; died, May 19, at Rochester, Minn., of peritonitis, following an operation for adhesions.

John Lewis Washburn ⊕ Youngstown, Ohio; University of Buffalo Department of Medicine, 1903; member of the Pittsburgh Ophthalmological Society; aged 51; died, June 21, of acute nephritis and rheumatic fever.

Emil T. Dippell ⊕ Huntington, Ind.; Jefferson Medical College of Philadelphia, 1897; member of the Central States Pediatric Society; aged 51; died, July 11, at St. Joseph's Hospital, Fort Wayne, of sinusitis.

Francis Patterson Morgan, Washington, D. C.; Columbia University College of Physicians and Surgeons, 1893; served during the World War; aged 59; died, July 4, of myeloencephalitis, following influenza.

George Alvis Waters, Pawnee, Okla.; University of Arkansas Medical Department, Little Rock, 1890; member of the Oklahoma State Medical Association; aged 60; died recently, of cerebral hemorrhage.

Edgar R. Perkins, Milwaukee; Hahnemann Medical College and Hospital, Chicago, 1868; Civil War veteran; aged 89; died, June 22, at the National Soldiers' Home, of valvular heart disease.

by an incomplete operation based on the clinical diagnosis of benignancy. A malignant growth in its earliest stages has no more definite symptoms than pregnancy in the early days.

In the surgical pathologic laboratory of the Johns Hopkins Hospital, 33 per cent of all sarcomas came under observation as recurrent tumors, and in 75 per cent of these the primary tumor was small, operable and, with the rarest exceptions, apparently curable. But, because of its small and apparently innocent character, it was enucleated or shelled out.

I would sincerely appreciate if readers of this letter will report to me instances of this kind in their observations. It is a simple message, and I feel confident that if properly brought to the attention of the medical profession, mistakes of this kind will cease.

Joseph C. Bloodgood, M.D., Baltimore.

IODIZED OIL IN THE GASTRO-INTESTINAL TRACT

To the Editor:—An experience that I have had with the use of lipiodol should be reported, to prevent a repetition. As this oily radiopaque substance had been employed successfully in the roentgen-ray investigation of various parts of the body, such as the lungs and the spinal cord, it occurred to me that it might prove to be ideal in a radiographic study of the anatomy and physiology of the gastric rugae along the lines of Forsell of Sweden. Because of the oily nature of the substance, I believed that on reaching the cardiac portion of the stomach, after being swallowed, it would gradually spread toward the pyloric ring and coat the mucosa in a manner to permit of a careful study of the gastric rugae over a prolonged period of time. I gave my patient three level teaspoonfuls of the lipiodol, and the manner in which the substance behaved appeared very encouraging. By the following morning, however, the patient had developed severe symptoms of acute iodine poisoning. I had failed to realize that gastric digestion would liberate free iodine, for absorption. The patient recovered.

Jacob Buckstein, M.D., New York.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will *not* be noticed. Every letter must contain the writer's name and address, but these will be *omitted*, on request.

TRANSILLUMINATION FOR DIAGNOSIS OF SINUS DISEASE

To the Editor:—I have bought various sinus transilluminators for the last ten years. The salesmen, the illustrated "case reports" of the company's literature, the attractiveness of the instrument, all make me think that I'm getting a bargain. Here is my question: Is there a make of transilluminator that actually does show pus in the sinus? All I ever get is the dull red glow of the hemoglobin in the skin, the same as one gets when one transilluminates the closed fingers. Theoretically, they are all efficient; practically, I have *found none*. I have been in clinics where the clinician deftly manipulated the lights and told his students that he saw the shadow of pus. Careful scrutiny on my part shows only the same dull glow, all alike. I wonder whether *others have* the same results. Could you name a good transilluminator? Please omit my name.

M.D., Illinois.

To the Editor:—Not knowing of better authority. I am asking you to give me your opinion as to the value and reliability of transillumination. The statement was made to me that transillumination is more accurate than the roentgen ray, but I am not, at this time, convinced that such is a fact.

William R. Barry, M.D., Alex, Okla.

Answer.—Transillumination is of value only to the frontal sinuses and the maxillary sinus, or antrum of Highmore. There are many fallacies to the test, no matter what form of transillumination is used. In the first place, one often gets a shadow on one or the other side when no pus is present, because of the fact that there is either thickened mucous membrane or very thin bone on that side, that the cavity on that side is very small, that there is a tumor, or that there is no cavity at all. On the other hand, one often gets clear transillumination even though there is fluid in one or the other sinuses. We cannot explain this phenomenon, but it does occur in practice. In other words, the transillumination must be used like any other laboratory tests, and if it fails to confirm the clinical findings, it must be often discounted or entirely disregarded. So far as the red glow is concerned, that should be present on the side that is clear, and absent on the side that is obstructed.

There are two methods of transilluminating the maxillary sinuses. One is to place the light, or rather the lamp, in the mouth and have the lips closed, and then look for the band of red light under the eye and in the pupils, the latter being due to the retinal reflex. Another method is to place the lamp on the floor of the orbit, open the mouth, and then look in the mouth and see the red glow on the hard palate if the sinus is clear. The latter method can be used only for the antrum of Highmore.

There are many forms of transilluminators, but it is better to use a very small cool lamp, as the lamp can be used in the floor of the orbit without causing any discomfort to the patient. The large lamps that are placed inside the mouth, especially those that are used with 110 volt current, cause a great deal of discomfort to the patient because of the heat produced. Furthermore, using any apparatus in the mouth necessitates that it be sterilized before using on the next patient. For the lamp that is used on the floor of the orbit, sterilization is not necessary, and if small lamps are used, as stated before, there is very little discomfort.

In transillumination of the frontal sinuses, of course, the light, whether large or small, is placed above the inner canthus of the eye and pressed against the floor of the frontal sinus.

Transillumination is largely a matter of relativity, in that there must be a comparison between the amount of light emitted when the lamp is passed from one side to the other.

CONGENITAL DISLOCATION OF FIBULA

To the Editor:—I recently delivered a male child with a congenital dislocation of the right fibula at its articulation at the ankle joint. The fibula is displaced posteriorly, leaving a marked depression at the point at which it should normally be located. This state of affairs evidently occurred some time ago while the child was still in the uterus, as it is *impossible* to replace the fibula to the normal position. There is also an abnormal *eversion of* the foot. In your opinion, what would be the best time to attempt correction of this deformity, and what type of operation would you advise?

L. D. Cutting, M.D., Stevens Point, Wis.

Answer.—The proper time to attempt to correct this deformity is immediately on its recognition. Many of these dislocations can be simply reduced by closed manipulation. If unsuccessful after a fair trial of closed manipulation without anesthesia, and secondly under anesthesia, an open operation is indicated; this operation consists of splitting the capsule, replacing the head and suturing the capsule. It is rarely necessary to use any further internal fixation; but, when this is indicated, catgut is usually sufficient.

The foot should be then slightly overcorrected and held in plaster of paris, followed by a simple brace.

It is important to determine whether the condition is a real congenital dislocation of the fibula, or whether it is a slipped epiphysis.

TRYPSOGEN

To the Editor:—I desire to inquire whether the claims that G. W. Carnrick Company makes for *Trypsogen* are correct when it states that the rebuilding of the injured *pancreas*, the correction of the faults of digestion and absorption, and *overcoming* the defective carbohydrate utilization are possible only by the *oral* administration of this product, as per their circular entitled Diabetes Mellitus.

Physician, Colorado Springs, Colo.

Answer.—Trypsogen, G. W. Carnrick Company, is a pancreatic preparation for oral use claimed (in the circular to which our correspondent refers) to effect "a *curative* action in diabetes by furnishing the specific active principles and proteins necessary for rebuilding the injured pancreas." It is stated to present "all the active principles of the pancreas, together with 1/200 gr. each of gold bromide and arsenic bromide."

As long ago as 1913 in discussing this preparation, which had been and was then being widely exploited, The Journal stated: "Were it of any value in this disease [diabetes], it would have won world-wide recognition for itself ere now, . . . As conditions of experiment in this question are extremely complex, it is not surprising that occasionally apparently positive results should have been obtained. Were it really useful, it should have yielded positive results much more uniformly. . . . Furthermore, if pancreas were really efficacious in the treatment of diabetes mellitus, the addition of arsenic, of gold, of bromide would be entirely unnecessary" (The Journal, Nov. 1, 1913, p. 1649).

In one of a series of articles on Glandular Therapy published under the auspices of the Council on Pharmacy and Chemistry (Application of Insulin in Internal Medicine, The Journal, Oct. 4, 1924, p. 1078), the following statements are made: "Of the three known pancreatic ferments, trypsin, amylase and lipase, trypsin alone has been shown successfully to resist drying and aging. . . . In diabetes, reliance on the oral administration of the pancreatic preparations thus far prepared has so little justification that such practice merits the most vigorous condemnation. To deny insulin to a patient with a tolerance for carbohydrate low enough to require it, and to substitute for this now well established drug some oral pancreatic medication, is comparable to treating cancer by massage. Many reputed antidiabetic pancreatic preparations are on the market with claims that they are effective if taken by mouth. . . . The claim that such preparations exert, in some mysterious manner, a rejuvenating or stimulating action on the diseased pancreas is based on uncontrolled clinical observation and chiefly on testimonials deserving no more consideration than do the similarly ill founded claims of the venders of 'patent medicines.'"

An insulin preparation effective when administered by mouth would be most desirable; but there is no evidence to indicate that such a preparation has been evolved. The caution made editorially in The Journal, Sept. 1, 1923, p. 753, still holds good: "It is desirable to give wide publicity to the current limitations of a most promising therapy, since unscrupulous venders of drugs are already attempting to distribute just-as-good pancreatic preparations that are recommended for oral use."

NORMA

To the Editor:—What is "Norma"? I have a patient who insists on taking it. M.D. Texas.

Answer.—Norma is a "patent medicine" exploited by a concern with the somewhat imposing name, Norma Laboratories, Inc., Albany, N. Y. It is advertised under the claim that it will lower blood pressure. Inquiries sent to the concern asking for information regarding the chemical composition of the nostrum have been ignored. As the thing seems to be a rather insignificant piece of quackery, and but few inquiries have been received regarding it, the A. M. A. Chemical Laboratory has not felt justified in going to the expense of making a thorough analysis of the preparation. As most products recommended for lowering blood pressure contain nitrites, qualitative tests were made for these and found to be positive.

TREATMENT OF DERMATITIS HERPETIFORMIS

To the Editor:—Kindly outline a course of treatment for a case of dermatitis herpetiformis of two years' duration. The following have been tried with little benefit: Dietetic: elimination of protein from the diet; salt-free diet. Medicinal: solution of potassium arsenite (Fowler's solution), bromides. *Physiotherapeutic:* quartz light. It has been suggested that this case would be benefited by balneotherapy. Do you think that it may be of value in this case and if so is a sojourn at a sulphur spring indicated? Would appreciate a list of resorts where sulphur springs are present. I. E. R., Bangor, Maine.

Answer.—Patients with dermatitis herpetiformis often receive considerable relief from the itching through the use of sulphur baths. It is not necessary to visit a sulphur spring for this purpose, as the baths can be taken at home. The patient should place about 2 tablespoonfuls of sulphurated potassa in the bath water. This has the disadvantage of discoloring the tub. Sulphur used in ointment form in a strength of 5 to 10 per cent is a useful application.

It is advisable that a search for focal infections be made, and proper treatment employed if any are discovered.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

American Board of Otolaryngology. Colorado: Denver, Sept. 13. Sec., Dr. H. W. Loeb, 1402 So. Grand Blvd., St. Louis, Mo.

New Hampshire: Concord, Sept. 9-10. Sec., Dr. Charles Duncan, Concord.

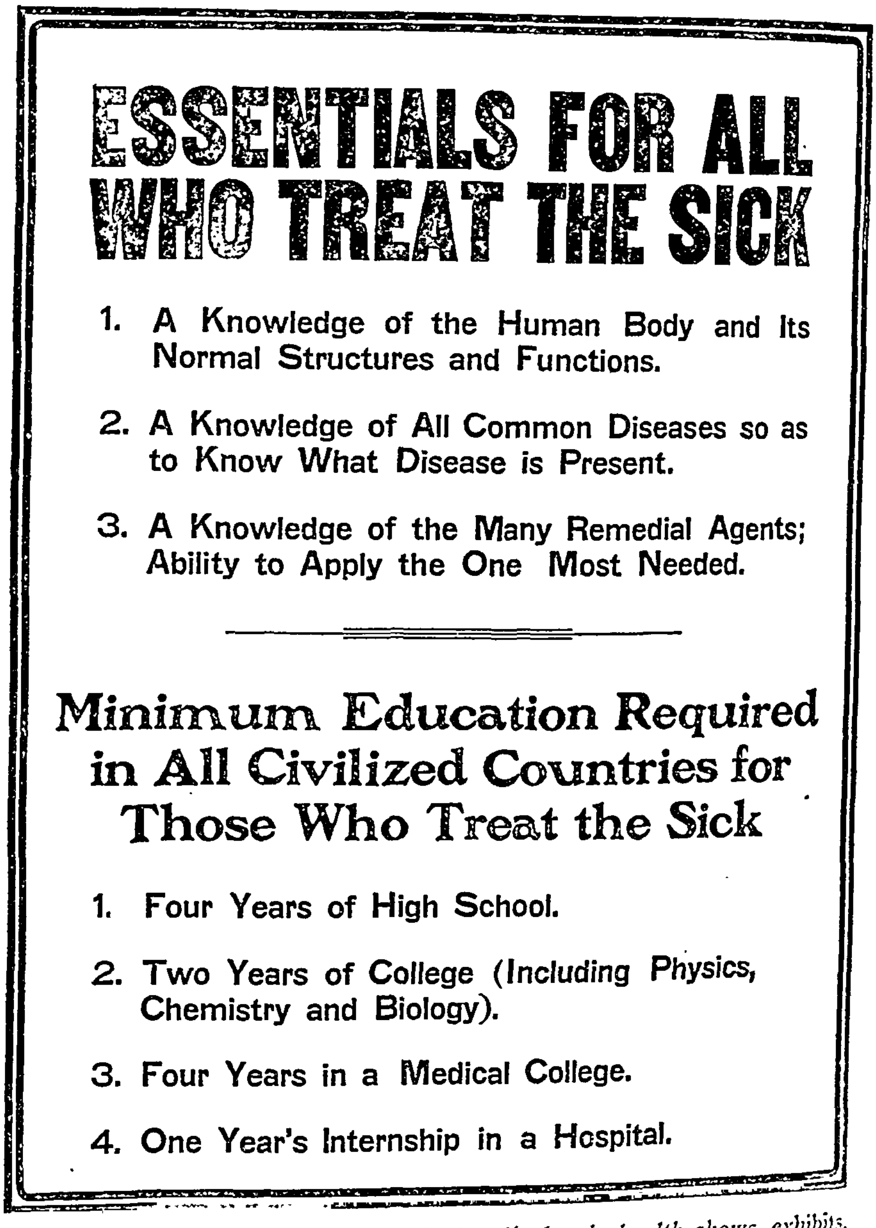
New York: Albany, Buffalo, New York and Syracuse, Sept. 20-23. Chief, Professional Exams. Bureau, Mr. Herbert J. Hamilton, State Education Building, Albany.

Oklahoma: Oklahoma City, Sept. 14-15. Sec., Dr. J. M. Byrum, Shawnee.

Wisconsin: Basic Science Board, Madison, Sept. 18. Sec., Dr. M. F. Guyer, University of Wisconsin, Madison.

A POSTER FOR THE EDUCATION OF THE LAITY

Following is a miniature of a large poster which attracted so much attention from physicians attending the Dallas session that it has been reproduced in quantities in a large (22 by 28) attractive two color poster on enameled, cloth-mounted paper, suitable for display in health shows, exhibits, lecture halls, classrooms or offices. Copies are available from American Medical Association Headquarters at 50 cents. For five or more the price is 40 cents each.



ESSENTIALS FOR ALL WHO TREAT THE SICK

1. A Knowledge of the Human Body and Its Normal Structures and Functions.
2. A Knowledge of All Common Diseases so as to Know What Disease is Present.
3. A Knowledge of the Many Remedial Agents; Ability to Apply the One Most Needed.

Minimum Education Required in All Civilized Countries for Those Who Treat the Sick

1. Four Years of High School.
2. Two Years of College (Including Physics, Chemistry and Biology).
3. Four Years in a Medical College.
4. One Year's Internship in a Hospital.

This special poster is being supplied in response to a definite demand from a number of physicians who saw the original poster at Dallas and were so struck with the telling words into which the essentials for all who treat the sick have been condensed that they wanted copies for display. The truth of these statements will be apparent to the laity as well as to the profession, and the poster, placed where people can read it, will be a constant, effective plea—in fact, a compelling argument—for scientific medicine.

Social Medicine

THE PRACTICAL VALUE OF NEWSPAPER PUBLICITY IN THE CONTROL OF CANCER

HARRY C. SALTZSTEIN, M.D.
Detroit

It is still recognized that the most important factor in the prognosis of any case of cancer is the duration of the disease before treatment has been instituted. Hence, anything bearing on early recognition is pertinent, and justifies a brief account of a few methods and results in the recent cancer week campaign in Detroit.[1]

As before,[2] the campaign consisted of (*a*) newspaper publicity culminating in (*b*) the visit of a well known authority on cancer, and (*c*) free cancer diagnosis clinics at all hospitals. Jan. 3, 1926, the newspapers carried the first announcement of the campaign. From then, until the visit of Dr. Francis Carter Wood, January 21, and the clinics four days later, an increasing amount of publicity and information about the disease was carried. From January 25 to January 30, eleven hospitals conducted clinics for the free diagnosis of cancer.

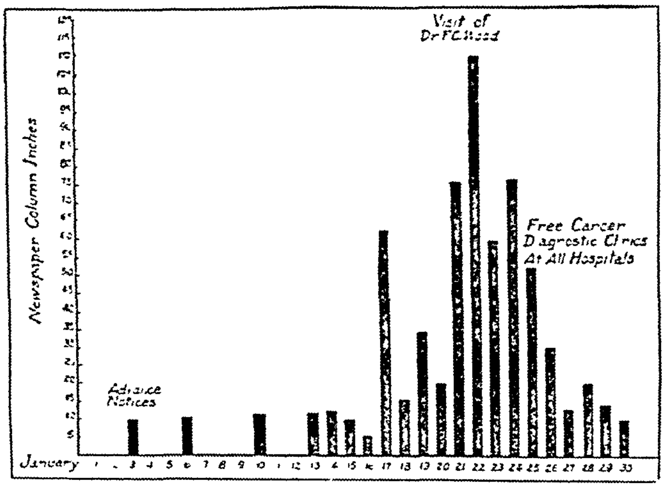
PUBLICITY

During this time, the three daily newspapers of Detroit carried 831 column inches of news about cancer. This is equivalent to more than four total pages of eight columns each. It represented sixty-six individual items, and contained most of the information deemed advisable for the public to have.[3] To get busy metropolitan daily papers (the total daily circulation of these papers is 800,000) to devote this much space to such an ordinarily uninteresting topic as cancer, a few principles of newspaper publicity must be borne in mind.

Editors and publishers will gladly cooperate in a movement of this sort and will assign special feature writers, donate advertisement space, and give "cancer" priority, as the occasion and the policy of the paper permit. It must be appreciated, however, that newspapers are commercial enterprises. They are not conceived primarily as mediums for the betterment of human welfare or popular education, but must print what their public wants to read. Though the audience of the press varies—some papers catering to much higher intellectual levels than others (even as communities vary in their intellectual level), it is a general rule that what the vast majority of persons want to read is a "reflection of their own emotions." Since the two cardinal emotions are love and a fight, it is natural that sex problems, divorce, human interest tales, crime and adventure fill much of the news columns; that the unusual, a debate, an issue, a fight, something about to happen, are front page headlines; but that the later apology, the after-results, scientific data and reports (unless they can be made into a discovery) receive a brief inside mention. The former contain appeals to human emotion, and people want to read of them; the latter contain no issue or appeal. The successful news story must have a fight involved (the Shenandoah fighting the elements); it is preferable that it be a personal fight (Red Grange vs. the entire football world); that the combatants be well known (Bryan vs. Darrow) or of such attainments or human interest that the public can quickly know them (Colonel Mitchell's attack on the army), and finally there should be a marked element of suspense (Floyd Collins: alive? dead? in the cave).[4]

The practical bearing of all this is that cancer, to be news, must become an issue. "Cancer Week Drive" and "Medics to Fight Cancer" will supply the human interest feature. Much more information about cancer will then be printed if every one knows that a "cancer week" is a short time hence—if there is the suspense of something about to happen—than if the same amount of data were submitted without being clothed with any issue. The typical advance article will contain a paragraph or two about the forthcoming arrangements, and then not more than a paragraph of facts about cancer. As the "campaign" develops, cancer will be more and more news, and much more information about the disease will be printed.

It must be fully appreciated that popular interest cannot be held for any great length of time. Throughout the course of a year, very few items hold the headlines for more than a week—the public tires. The average time spent on the entire perusal of the morning paper is fifteen minutes; of the evening paper, from twenty to twenty-five minutes. The publicity should lead up to a week of considerable activity, and then must stop. The advance articles will be best read if not more than from one-fourth to one-half column in length.



News space devoted to cancer during cancer week in Detroit, 1926.

During the week, if a well known authority arrives to deliver a series of talks on cancer, the campaign takes on the aspect of a personal encounter with a well known individual involved. Cancer then has all the news features of a big story and will easily be a front page topic of one, two or three columns for one, two or three days. Dr. Francis Carter Wood's addresses were given an immense amount of news space under such captions as "Noted Cancer Expert Arrives Today" or "Foe of Cancer Flays Quacks." The opportunity can be taken to give definite and detailed instructions about the disease, which would otherwise be very difficult to make into news. After this, the news value is gone. A summary of results obtained was given to the papers ten days after the hospital clinics closed. Although this represented the gist of the campaign, it was now only scientific data or reports, of little desirability as news. One newspaper did not print any of it; the second printed a few brief sentences; the third ran a condensed article through two thirds of the daily edition.

The accompanying chart graphically demonstrates the short advance notices, the peak during Dr. Wood's visit, the sustained publicity for another two or three days before the clinics opened, and the rapid falling off soon after, while the clinics were being held.

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[1] The campaign was financed by the Wayne County Medical Society, directed by a committee consisting of G. Van Amber Brown, chairman, and Drs. W. A. Evans, W. D. Barrett, C. F. Vale, C. E. Dutchess and C. I. Owen.

[2] Saltzstein, H. C.: Publicity in Cancer, J. A. M. A. 82:2140 (June 28) 1924.

[3] Fifteen foreign language papers and neighborhood weekly and semiweekly commercial sheets copied some of this material in each of their issues during the drive. Though no estimate could be made, the additional publicity through these channels was considerable.

[4] Merz, Charles: What Makes a First-Page Story? New Republic, Dec. 30, 1925, p. 156. These illustrations are taken from the most successful news stories in 1925.

RESULTS

The free clinics at eleven hospitals examined 2,345 people who suspected that they had cancer.

Table 1 shows the percentage of positive cases (cancer and conditions that may become cancer) found at the various hospitals. From 14 to 22 per cent were found positive; two thirds of all the hospital examinations (Harper, Ford, Grace, Receiving, Deaconess, Woman's, Delray) showed between 14 and 17 per cent of positive cases. The close agreement in the percentage of positive cases in examinations at so many different institutions is rather noteworthy.

Table 1.—*Findings in Cancer Examinations in Detroit Hospitals*

Hospital	Positive	Negative	Per Cent Positive
Harper	68	400	14.5
Grace	27	160	14.5
Woman's	9	45	16.6
Henry Ford	110	523	17.2
Deaconess	27	131	17.0
Receiving	17	79	17.7
Delray	11	51	17.7
St. Mary's	26	103	20.2
St. Joseph	17	60	22.1
Highland Park	38	138	21.6
Providence	45	157	22.3
Total	395	1,847	

These results are quite similar to those obtained in the examination of 874 persons in a similar campaign two years ago.[2] At that time 13 per cent of the total showed cancer or precancerous lesions.

Table 2.—*Data in Positive Cases and Conditions Liable to Develop into Cancer* *

Skin cancer	47
Senile keratoses	33
Moles	54
Irritated warts, miscellaneous tumors of skin (not including sebaceous cysts or simple warts, keratoses, etc.)	34
	168
Breast cancer	18
Doubtful breast cancer	11
Benign tumors of breast	61
	90
Cancer of lip	9
Doubtful cancer of lip	6
Irritation from teeth fissures, etc	6
Benign tumor of lip	10
	31
Mouth cancer	1
Doubtful mouth cancer	6
Irritation from broken plates, teeth, etc	17
Leukoplakia	16
Chronic irritation of tongue	6
Benign tumors of mouth	6
	52
Carcinoma uteri	14
Suspicious bleeding	15
Stomach cancer	3
Rectal cancer	2
Hematuria	2

* Only previously unsuspected or untreated cancers are included. Hopeless or adequately treated growths were not counted as having been discovered in the clinics.

Table 2 shows the positive cases, those definitely diagnosed as cancer, or conditions which, if left alone, might develop into cancer.

Since so many diagnoses could not be final in a brief examination, no separate total of cancers discovered is made. Positive cases include all of the conditions shown in table 2.

As was expected, the best results were obtained in the more easily noticeable external growths; forty-seven skin cancers were discovered. Ninety breast tumors were discovered, in eighteen of which a positive diagnosis of cancer was made, and eleven more were highly suggestive of cancer. Mouth lesions were again interesting from the point of view of prophylaxis, many cases of leukoplakia, irritation from broken teeth, plates, etc., being seen, and fewer cancers. Since cancer of the mouth always starts from leukoplakia, persistent irritation, chronic inflammation or warts, and never in a normal mouth,[5] these figures were considered quite gratifying. Gastro-intestinal cases were again a disappointment. There were just three stomach and two rectal cancers diagnosed. These examinations could not be complete, of course, but the experience here corresponds with the previous campaign—gastro-intestinal cancers are not easily discovered by these methods. Twenty-seven patients with uterine fibroids, forty with hemorrhoids and a host of all sorts of dyspeptic patients, a large number of whom had remediable conditions for which they had not had adequate treatment, demonstrated again the possibilities of publicity applied to medicine, and hinted again at the vast untilled field of medical practice.

The results of the campaign did not show in any increase in the number of operations for cancer in the various hospitals, as listed in the daily bulletin of surgical operations published by the Wayne County Medical Society, nor did the surgical laboratories of two hospitals show increase in cancer material during and following the period of the publicity. But individual instances of the warnings and advice having been heeded were widespread enough to satisfy all of the local profession who treat cancer that there was an effect from the drive.

The following case may be cited as such an individual instance, and in illustration of the fact that early lesions are not heeded except when the patient is repeatedly warned:

Miss R. S., aged 42, when seen during the time of the cancer publicity two years ago, presented a small superficial nonindurated ulceration of one quadrant of the nipple, three-eighths inch (9.5 mm.) in extent. It had been present for four years (before that her corset had repeatedly rubbed the left nipple), but had remained stationary for several months, discharging slightly, often showing a tendency to heal. It was very early Paget's disease of the nipple. As it did not respond to a few weeks' cleanliness and protection,[6] excision was advised. She could not quite make up her mind to consent, canceled the hospital reservation, and disappeared from observation. This cancer week made her again suspicious. The lesion had now grown somewhat, so that it occupied one third of the nipple; it was covered by a grayish crust, and the breast beneath it felt firmer than the opposite side. She was examined at one of the hospital clinics, and finally consented to a radical removal. Microscopic examination showed typical carcinoma cells in the ducts beneath the nipple, but nowhere had they yet broken through the basement membrane. Thus, two publicity campaigns were necessary to make this woman undergo treatment while the disease was still in the early stage of development.

Though no figures are available, the impression is distinct that earlier cases of cancer are seen during the period of the publicity than at other times. Especially is this so in tumors of the breast, skin and uterus. Many more borderline lesions, often presenting more than the usual diagnostic difficulties, are seen during "cancer week" than during routine practice throughout the year.

COMMENT

Most of the clinical articles on cancer in medical journals comment on the late stage in which cases come to treatment. The authors frequently deplore the situation. In this situation there is no more valuable instrument to use than the daily newspaper. Its ceaseless activity, its wide human interest, its tremendous appeal, reaching the entire community, both lay and professional, can be made to tell the whole story of "cancer—how to beat it," at least to the possibilities of the control of cancer by popular education, and the saturation of the community with this sort of endeavor at any one time.

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[5] Bloodgood, J. C.: Cancer of the Tongue, a Preventable Disease, J. A. M. A. 77: 1381 (Oct. 29) 1921.

[6] Bloodgood, J. C.: Paget's Disease of the Nipple, Arch. Surg. 8: 461 (March) 1924.

306 Kresge Building.

Book Notices

Puerperal Septicaemia: Its Causation, Symptoms, Prevention and Treatment. Being the Substance of a Thesis Submitted to the Royal Society of Medicine in June, 1924, and Awarded the Nicholls Prize. By George Geddes, M.D., C.M. Cloth. Price, $4. Pp. 200, with illustrations. New York: William Wood & Co., 1925.

Dr. Geddes attempts to prove by a statistical study that there is a definite relation between the incidence of industrial accidents and puerperal infections. We must express our admiration for one who will devote such indefatigable energy and industry to a subject that has long been a matter of common knowledge: years before the antiseptic era it was known that puerperal infections were more prevalent among women in centers of population than in rural districts. However, it is apparent that the author has not proved his claim that the incidence of puerperal infections increases proportionately to the frequency of industrial hazards. It is common experience that when one attempts by a statistical study to prove a definite contention, figures fail to demonstrate the extraneous factors which affect that contention, and as a result the deductions are prone to present fallacies. A critical study of the table from which all his bases are derived does not show that industrial accidents alone affect the incidence of puerperal infections. A summary of the table demonstrates this assertion:

Type of District	Population	Mean Rate—Puerperal Fever per 1,000 Births	Accidents per 50 Births
Residential	140,831	2.00	8.1
Rural	242,565	2.63	17.3
Mixed	295,068	2.65	12.0
Weaving	117,533	2.67	13.5
Spinning and weaving	366,278	3.01	20.0
Spinning	237,973	3.70	23.6
Mining	303,721	3.81	104.0

This summary shows that the residential district with one thirteenth of the accidents that occur in the mining district has somewhat more than 50 per cent of the puerperal infection rate obtaining in the mining district. Dr. Geddes writes from the point of view of the general practitioner: he contends that the medical man carries the infection from the infected accident cases to his parturient women—he alone is responsible. He objects strenuously to the opinion that there may be an auto-infection: on page 5 he expresses his doubt: on page 21 he states that "there are a few members of the profession who pin their faith to the auto-infection therapy—a dangerous theory if it acts as a salve to a troubled conscience." We feel as strongly as Dr. Geddes does that the attendant should weigh the evidence of his responsibility, but we cannot subscribe to the denial of the opinion that there may be an autogenous infection in the puerperal period. Surely, an appendicitis, a cholecystitis, other regional infections may arise from within the body; it is just as plausible to believe that there be a definite incidence of a puerperal autogenous infection. It is dangerous teaching, with our present knowledge, to maintain that the attendant is always responsible for the infection. Exception may be taken to the statement on page 144: "Then there is the question of rubber gloves. If these are worn there need not be the same care bestowed upon the hands." There must be the same meticulous attention to the cleansing of the hands with or without the use of the gloves, for rubber punctures or tears so readily that unclean hands within the gloves may be an actual menace. Nor is the statement that a vaginal douche (page 149) is sufficient preparation for a vaginal examination an acceptable one. It is not in consonance with American and continental teaching that all puerperal infections are to be given either vaginal or intra-uterine douches twice daily as a routine. Dr. Geddes does not discriminate in the indications for one or the other. The statement on page 160 that the mortality of puerperal sepsis in England is between 71.4 and 80 per cent is startling; nothing in the tables warrants such an assertion.

Le rêve et la psychanalyse. Par le Dr. R. Laforgue. Avec la collaboration des docteurs Allendy, Ed. Pichon, R. de Saussure. Introduction de M. le Dr. Hesnard, Professeur de l'Ecole médecine navale de Bordeaux. Paper. Price, 12 francs. Pp. 248. Paris: A. Maloine, 1926.

This explains simply but in fair detail the importance of dreams in psychanalysis. Due justice is paid to Freud, and his doctrines form the basis of the book, which is really a summary of his work, although the examples and interpretations are all from original French sources. The book is divided into three parts. The first is historical, and gives a good description of ancient and modern dream conceptions. Authors from the ancient Greeks, Romans, Persians and Chinese are quoted; the superstitions and ideas of the value and meaning of dreams held by the natives of Scandinavia, Greenland, North America (Indians), Madagascar, Pacific Islands and many other places are sketched. The older French conceptions of dream import are fully explained in another chapter, and prefreudian interpretations are minutely detailed. The second portion of the book is concerned with the technical side of the interpretation of dreams according to Freud's method, and here the manifest and latent content of dreams, their significance and interpretation, and transference are all discussed. The third and last part of the book consists of clinical cases. Here concrete examples of dreams are cited, the interpretations given, and resultant cures of the patients related. This is altogether a good introductory volume in French of the value of dreams in psychanalysis, and the part they play in the cure of neuroses.

The X-Ray in Embryology and Obstetrics. By W. A. Newman Dorland, A.M., M.D., F.A.C.S., Professor of Gynecology and Obstetrics and Head of the Department of Obstetrics in the Post-Graduate Medical School of Chicago, and Maximilian John Hubeny, M.D., F.A.C.R., F.A.C.P., Editor of Radiology. Cloth. Price $10. Pp. 420, with 259 illustrations. Saint Paul: Bruce Publishing Company, 1926.

This represents an immense amount of work on the part of the authors in reviewing a voluminous literature; it really constitutes a collective review and bibliography that should prove of value as a reference to students of this subject. The book is put up in presentable form, printed on good paper, and is profusely illustrated with carefully selected roentgenograms. The first chapter, on the influence of roentgen rays and allied substances on living tissues, is a collective review emphasizing the harmful effects of the roentgen ray in pregnancy, but fails to distinguish between the effects of therapeutic and roentgenographic dosages. Bartelmez says in this connection in the introduction: "With the short exposures now employed in x-ray diagnosis it is highly improbable that either germ cells or embryos can be affected. When, however, they or the gamma rays of radium are used therapeutically there is always a possibility that grave disturbances of development may result." In chapter II, under embryonic development of the osseous system, the important contribution of Hess on the extracorporal fetus is extensively quoted, and under the same heading Stein and Arens are cited without designating that all the latter's observations were on the intra-uterine fetus, a most important distinction. Chapter VII deals with radiography of the pelvic organs, describing the use of pneumoperitoneum. Only about two pages are devoted to this rather important radiologic accomplishment, while a hundred pages each are devoted to literature citations on embryology and on teratology. The authors seem to have had little experience with pneumoperitoneum, for they state that "normal fallopian tubes are not seen as separate or recognizable shadows," and, again, that "normal ovaries apparently cannot be seen in the pelvic radiograph." The use of opaque mediums in the field of diagnosis is entirely omitted from this chapter, although valuable papers have been contributed since 1920 by Heuser, Forrestier, Kennedy and others. In a later chapter, Heuser is briefly cited in this connection. The illustrations have been collected mostly from other sources and usually the author is given credit; but on page 255 three illustrations appear without evidence as to their source, leaving the reader with the impression that they are the authors' while in reality they belong to Stein and Arens. On the opposite page, "justo minor pelvis—Dorland" appears. If this work is to be of real value to the practitioner of medicine, the chapter on the roentgen-ray diagnosis of normal intra-uterine pregnancy should be at least as fully illustrated as the rest. Unfortunately, this is not so. Descriptive drawings accompanying the roentgenograms would have added greatly to the value of the work. It is obvious that the authors have had more personal experience with the roentgen ray in teratology, having devoted one fourth of the entire work to this interesting but least important aspect of obstetrics.

A Text-Book of Medical Diagnosis. By James M. Anders, M.D., Ph.D., LL.D., Professor of Medicine, Medico-Chirurgical College Graduate School of Medicine, University of Pennsylvania, and L. Napoleon Boston, A.M., M.D., Associate Professor of Medicine, Graduate School of Medicine, University of Pennsylvania. Third edition. Cloth. Price, $12. Pp. 1422, with 555 illustrations. Philadelphia: W. B. Saunders Company, 1925.

In the field of medical diagnosis there are not many books of the type of Anders and Boston; nor, perhaps, is there any type that is more valuable. This sort of work is a bedside book; not in the sense that its 1,422 pages could be taken to the bedside but that it is the product of long years of bedside observation, minute and keen, executed and recorded by authors who have been ready to check up their sense gained evidence in modern laboratories, and to welcome laboratory methods as an addition to their methods. They have incorporated all their experience in the book. There is the usual division into diseases of the respiratory system, circulatory system, etc., with their various subdivisions. Under each disease are given the data, clinical and laboratory, that may be useful in arriving at a diagnosis. This makes it unnecessary for the physician to consult one work on physical diagnosis, another on general medicine, another on laboratory procedures, and so on. Much new material has been added in order to bring the work down to date.

The Principles and Practice of Medicine. Designed for the use of practitioners and students of medicine. Originally written by the late Sir William Osler, Bt., M.D., F.R.S. Revised by Thomas McCrae, M.D., Fellow of the Royal College of Physicians, London. Tenth edition. Cloth. Price, $7.50. Pp. 1233, with illustrations. New York: D. Appleton & Co, 1926.

In preparing the tenth edition of this classic practice of medicine, the type has been completely reset. Dr. McCrae points out that constant effort has been made to retain the features characteristic of Osler. The additions have been carefully chosen with a view to permanence rather than to strict up-to-dateness by the inclusion of unestablished views. Obviously, however, recent work on scarlet fever, tularemia, hypertension and many unusual disturbances of the blood and blood-forming organs have had to be included. The new type is clean and easily read. The editor has been careful to use the best established nomenclature. This book continues to maintain its supremacy among textbooks on the practice of medicine.

Handbuch der praktischen Therapie als Ergebnis experimenteller Forschung. Herausgegeben von Reinhard von den Velden, A. O. Professor an der Universitat Berlin, und Paul Wolff, Dr. Med. et Phil., Berlin. Erster Band. Erste und Zweite Halfte. Paper. Price, 66 marks. Pp. 1137, with illustrations. Leipsic: Johann Ambrosius Barth, 1926.

The idea underlying this ambitious work is that therapeutics will have to be presented in a different manner than it has been in the past to escape the criticism, on the one hand, that therapy is unscientific and, on the other, that scientific medicine has neglected practical therapeutics. True it is that the classic forefathers of scientific medicine focused their attention on pathology and diagnosis and had little to say about therapeutics, because its scientific foundation was at that time pitifully weak. The following decades have, however, enriched our knowledge by the development of pharmacology, chemical pathology and physics to such an extent that we now have quite a respectable foundation for a "practical therapy based on experimental research," to which this monumental work is dedicated. The first volume is essentially a collection of monographs on pathologic physiology. But the subject is developed just one step more than is usually the case with books on this subject: the all important step of how and to what extent the various pathologic processes may be influenced therapeutically. The editors have been fortunate enough to enlist some of the most eminent investigators of Europe in cooperation on this task The result, though excellent in most respects, is a certain amount of overlapping of fields and even of difference of opinion on some questions. This, however, perhaps even adds to the value of a book not written for medical students so much as for their teachers and for practitioners of medicine in general. If the second volume, which is to deal with special therapy, will be as stimulating and inspiring as well as instructive as is the first volume, the editors as well as readers may indeed be congratulated.

A Manual of Clinical Laboratory Methods. By Clyde Lottridge Cummer, Ph.B., M.D., Associate Professor of Clinical Pathology, School of Medicine, Western Reserve University. Second edition. Cloth. Price, $6.50. Pp. 547, with 181 illustrations. Philadelphia: Lea & Febiger, 1926.

The previous edition of this work was issued in 1922. In the present edition the original plan and purpose have been retained, in the main, with the addition of less than a hundred pages. Nevertheless, although the bulk is not greatly increased, the number of additions and changes is considerable. As the author points out, the original chapter on blood now comprises five chapters, and includes new material on the subjects of complement fixation, the anemias, and chemical examination of the blood. Further new features are found in the sections on urinary pigments, parasites, spinal fluid examination, cutaneous reactions, basal metabolism and liver function. Proportionally the sections on blood work take up nearly half of the book and the remainder is well apportioned to examination of the urine, the gastric and duodenal contents, the feces, the sputum and the body fluids, together with chapters on basal metabolism and bacteriologic methods. An appendix comprises preparation of solutions, stains, lists of apparatus and other matters necessary to know in the running of a clinical laboratory. The work is handy, concise and well illustrated—a distinctly practical book.

Human Physiology. By John Thornton, M.A. Revised by William A. M. Smart, M.B., B.S., B.Sc., Department of Physiology, London Hospital Medical College, University of London. Third edition. Cloth. Price, $3.75. Pp. 463, with 281 illustrations. New York: Longmans, Green & Co., Ltd., 1926.

This is an exceptionally clear and reliable presentation of the essentials of physiology within a space of less than 500 pages. The illustrations are mainly anatomic. They are all clear cut and well chosen. The book is written primarily for medical students, but the author endeavors at the same time to present physiology as a science, and he has tried wherever possible to elucidate the principles of physiology in interpretation of the signs and symptoms of the more common diseases.

Middle Age and Old Age. By Leonard Williams, M D. Cloth. Price, $3.25. Pp. 296, with 1 illustration. New York: Oxford University Press, 1925.

Here is a volume of sound advice, either for the physician or for the public, on the hygiene of middle age and the period past 60. It is well written, although somewhat symbolical in its choice of chapter headings: for example, red lights, falling ground and the last phase. "Red lights," in this instance, concerns the detection of the earliest symptoms of decay. The book is well printed in large type, which will not place too great a strain on the old who are likely to want to read the book. It is perhaps the most sound of some half dozen volumes for the elderly which have recently made their appearance.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits

Abhandlungen aus dem Gesamtgebiete der Kriminalpsychologie (Heidelberger Abhandlungen). Herausgegeben von K. von Lilienthal, S Schott und K. Wilmanns. Heft 4 Studien über Persönlichkeit und Schicksal eingeschriebener Prostituierter. Von Dr Med. et Phil. Kurt Schneider, A O Professor für Psychiatrie, Universitat Köln. Second edition Paper. Price, 18 marks Pp 281. Berlin: Julius Springer, 1926

Why girls go wrong as exemplified in the biographies and study of numerous German examples.

Biological Relations of Optically Isomeric Substances. By Arthur R Cushny, M A, M D, LL D, Professor of Pharmacology and Materia Medica in the University of Edinburgh Cloth. Price, $2. Pp 80, with 4 illustrations Baltimore: Williams & Wilkins Company, 1926.

Last essay of noted British pharmacologist.

Bot Flies of the Punjab By Captain H. E. Cross, M R C.V S, D V H, A Sc, Camel Specialist, Sohawa, Punjab Agricultural Research Institute, Pusa. Bulletin No. 160. Paper. Price, As 14 or 1s 6d. Pp 16, with illustrations Calcutta: His Majesty's Service, 1926

Identification and control of a pestiferous burrowing Hindu fly.

Vorbereitung, Durchführung, Nachbehandlung chirurgischer Eingriffe. Grundsätze der Schmerzbetaubung, Aseptik, Wundversorgung Von Professor Dr Paul Zander, Chirurg des Elisabethenstifts Darmstadt Paper Price, 4 marks Pp 76 Leipsic Repertorienverlag, 1926.

Practical monograph on care of infected wounds

Geburtshilfliche Tagesfragen Von Med Rat Dr Kupferberg, Direktor der Hebammenlehranstalt in Mainz, und den Anstaltsärzten Dr Balhorn, Dr. Nelius, Dr Koch und Dr Werle Paper. Price, 4 50 marks Pp 110 Leipsic· Repertorienverlag, 1925

First aid to the uninspired obstetrician.

Die Hygiene der menschlichen Fortpflanzung: Versuch einer praktischen Eugenik. Von Alfred Grotjahn, o. Prof d sozialen Hygiene a d Universitat zu Berlin Paper Price, 15 marks. Pp. 344. Berlin: Urban & Schwarzenberg, 1926

Practical eugenics

Frigidity in Woman in Relation to Her Love Life. By Wilhelm Stekel In two volumes Authorized English version by James S Van Teslaar Cloth Price, $9 Pp 618 New York: Boni and Liveright, 1926

Latest scientific romances of well known out-Freuder of Freud.

Der Alkoholgenuss und der Alkoholmissbrauch vom ärztlichen Standpunkt Von Chefarzt Dr Med Paul Engelen Paper. Price, 1.20 marks Pp. 23 Leipsic· Repertorienverlag, 1926.

What alcohol will do—physically and mentally but not socially.

Die Therapie der Herzkrankheiten. Von Dr Carl Haeberlin, Leiter des städtischen Krankenhauses in Bad Nauheim Paper. Price, 1 50 marks Pp. 34 Leipsic: Repertorienverlag, 1925.

Brief manual of therapy of cardiac disease.

Nervöse Herzerkrankungen u ihre Behandlung Von Dr Lilienstein, und Prof Dr Kastan Second edition Paper. Price, 1.20 marks Pp 32 Leipsic: Repertorienverlag, 1925.

Outline of diagnosis and treatment of cardiac neuroses

Education and the Good Life By Bertrand Russell Cloth Price, $2 50 Pp 319 New York Boni & Liveright, 1926

A noted English liberal thinker defines his personal belief and practice in juvenile education

Final Report on the Survey of Hookworm Infection, General Sanitary Conditions and Organized Health Work in the Straits Settlements By M E Barnes, M D, Dr P H, and Paul F Russell, M D The International Health Board of The Rockefeller Foundation. Paper Pp 80 Singapore, 1925

Report on the Health of the Army for the Year 1924 Volume LX. Cloth. Price, 3s 6d net Pp 146 London His Majesty's Stationery Office, 1926.

United Fruit Company, Medical Department. Fourteenth annual report, 1925 Paper New York: United Fruit Company.

Miscellany

DENTAL DISEASE IN CHILDREN

The Medical Research Council has published an investigation into the incidence of dental disease in English children. An investigation in 1921 showed dental caries exceedingly prevalent among children of school age. The results have not been of great value for scientific purposes for several reasons. The inspections were made by a large number of different persons whose estimates of the existence and extent of caries were divergent. Moreover, the object was to afford an indication or basis for treatment; hence, they were useful only for clinical purposes and not from an etiologic standpoint. The committee therefore decided that the collection of fresh data was necessary. The number of children now examined was 4,258. Of these, 2,163 were boys and 2,095 were girls. Their ages varied from 2 to 15 years. The selection of schools at which examinations were carried out was made with a view to securing the widest variety with regard to geographic, physical and industrial condition. Preference was given to schools whose children for various reasons had not received dental treatment. Selection was made in such a way that approximately the same number of children were chosen for each age period between 6 and 13.

The only reliable values that could be calculated from the data for the teeth in the different stages of eruption were the ages at which children were found with half the teeth of any type (1) partially erupted and (2) fully erupted. The ages at which 50 per cent of the several types of teeth were partially erupted and the order of eruption based on those ages are stated. Thus, lower first molars were present at 6.1 years; upper first molars, 6.2; lower central incisors, 6.4; upper central incisors, 7.3; lower lateral incisors, 7.6; upper lateral incisors, 8.6; upper first premolar, 9.9; lower canines, 10.4; lower first premolars, 10.6; upper second premolars, 10.8; lower second premolars and upper canines, 11.5; lower second molars, 11.7, and upper second molars at 12.2 years. Thus, the dates of eruption of the teeth in the lower jaw are earlier than those of the corresponding teeth of the upper jaw in all types except the premolars. The age of eruption was usually lower in girls than in boys. These dates of eruption correspond fairly closely to those determined by Röse in Germany. The time required for completion of eruption was obtained by determining the differences between the ages at which 50 per cent of each type were found present in any stage of eruption and the age at which they were fully erupted. The time required for completion of eruption of the upper first incisors and upper second incisors was 1.3 years; lower first incisors, 1.2, lower second incisors and lower canines, 1.1; upper canines, 1 year; upper and lower first premolars, 0.9; upper and lower second molars, 0.7; lower first molars and lower second premolars, 0.6, and for upper first molars and upper second premolars, 0.5 year.

The incidence of caries in particular teeth is in a measure influenced by the condition of the deciduous teeth. For example, the distal surface of the first permanent molar hardly ever becomes carious until after the eruption of the second permanent molar at the age of 12. On the other hand, the mesial surface frequently becomes carious early if the distal surface of the second deciduous molar is carious; and if the latter tooth is sound or has been treated, the mesial surface of the permanent tooth rarely becomes carious until some time after the eruption of the second premolar at the age of 10 or 11. The incidence of caries in deciduous teeth was difficult to determine, owing to the fact that between the ages of 7 and 12 the deciduous teeth are shed by natural process. Temporary molars manifested the highest incidence of caries; the incidence was slightly higher in the second than in the first molars. The central incisors came next in frequency, and then the lateral incisors and canines. Of the various surfaces of the deciduous teeth, the mesial and distal surfaces were most frequently affected, with one exception. In the second molar teeth the occlusal surface was most frequently the seat of trouble.

In the upper central incisors, caries most frequently affects the mesial surface. The lower incidence on the distal surface is due to the late eruption of the lateral incisors that are destined to make contact with it. The mesial surface was involved in 62 per cent of carious central incisors, and the distal surface in 48 per cent. In children at the age of 10, which is three years after 50 per cent of the upper central incisors have erupted, the total amount of caries is approximately 3 per cent. At 12 years the incidence has increased to 5.5 per cent, and at 13 it has reached 9 per cent. The upper lateral incisors are affected in a percentage similar to the central. The mesial surface is the commonest site, and the lingual pit is often involved; the distal surface is rarely affected, presumably because of the late eruption of the canines. The mesial, lingual and distal surfaces of carious teeth are affected, respectively, in 83, 16 and 4 per cent. In children of 11, that is, three years after 50 per cent of the upper lateral incisors have erupted, the number of carious teeth of this description is 3 per cent. In children 2 years older, the percentage exceeds 7. The lower incisors are relatively free from caries. Thirteen instances were found in an examination of 6,314 lower central incisors, and the same number in 5,343 laterals. The canine teeth are also relatively free from caries. Nine cases were found among 2,144 teeth in the upper jaw, and only two cases among 3,094 in the lower. In children at the age of 7, which is one and a half years after the age at which 50 per cent of the upper first molars have erupted, the proportion of caries is 18 per cent. In children at the age of 9, 33 per cent of these teeth are carious, and at 13 the proportion has reach 52 per cent. At the age of 7, which is about one and a half years after the age at which 50 per cent of the lower first molars have erupted, the total percentage of carious teeth of this description is 28.5. In children two years older, the percentage has increased to 45. At the age of 13, the percentage of decay is 61.5. In the upper second molars practically all the caries is in the early stage and is almost confined to the fissures of the occlusal surface. Caries that is apparently lingual is really the result of extension on the lingual surface of one of the occlusal fissures. In children at the age of 13, which is nearly one and a half years after the age at which 50 per cent of the upper second molars have erupted, the total caries is 16.5 per cent. At the age of 14, the percentage has increased to 23.5. Caries in the lower second molars is nearly twice as frequent as in the corresponding teeth in the upper jaw. As in the first molars, caries of the buccal pit plays a part in causing this difference. At the age of 12 years, which is about a year after the age at which 50 per cent of the lower second molars have erupted, the proportion of carious teeth is approximately 28 per cent. In children two years older, the total percentage of caries in these teeth has increased to 44.

Arrested caries was found in only forty among 6,753 permanent teeth. Arrest of caries is more than six times as common in deciduous as in permanent teeth. In permanent teeth, it is recorded only in molars and premolars. Occlusal cavities are by far the most common site for its occurrence, and in most instances the caries is of the third degree of severity. This implies a considerable loss of enamel from the occlusal surface. These facts point to accessibility of the cavity as an important factor in the arrest of caries. It was noticeable that when arrested caries occurred mesially or distally in deciduous teeth, it was nearly always associated with wide spacing due to the growth of bone; this occasioned greatly increased accessibility. Another point bearing on the greater frequency of arrested caries in deciduous than in permanent teeth is the rapid wearing down of the occlusal surface of the former. This tends to make cavities shallower and to smooth off overhanging edges of enamel.

An attempt was made to investigate the incidence of caries as it occurred in schools in different parts of the country. It was found that caries was more frequent in town than in country schools. The question of hard and soft water supply was also investigated. It was not found possible to ascribe any etiologic significance to the character of the water.

In determining gingivitis, the slightest lapse from the typical firmness and paleness of perfect health was recorded as slight gingivitis. About a third of all the children examined fell into this class. In probably half of these the slight inflammation affected all buccal gingivae in both jaws and seemed obviously due to persistent neglect to clean the teeth. In most of the remaining children the condition was limited to the anterior upper teeth and was frequently associated with a history of enlarged tonsils and adenoids.

Medicolegal

Rulings in Action Against Roentgenologist—Evidence

(Butler v. Rule (Ariz.), 242 Pac. R. 436)

The Supreme Court of Arizona, in reversing a judgment for $1,000 damages obtained by plaintiff Rule, as administratrix, for the death of a woman alleged to have been caused by the negligence and unskilfulness of the defendant, a roentgenologist and physician, in administering a roentgen-ray treatment for a sarcoma of twelve months' growth in the left groin, says that the only expert testimony on the question as to whether the treatment described by the defendant as having been given was proper or not was the testimony of the defendant and that of another physician, who testified as a roentgen-ray expert. According to these experts, the defendant was not guilty of negligence or want of skill. In giving the treatment, he had exercised the care and skill usual among physicians and surgeons in good standing under similar circumstances—the standard to judge him by in the use of the roentgen ray as a remedial agent. However, if there was evidence as to the manner in which he administered the treatment in conflict with his testimony, and tending to show that in some essential the treatment was not given as the defendant stated, the expert testimony to that extent would fail, and a question of fact for the jury arise. The value of an answer to a hypothetic question may be destroyed, if the facts or some of the facts on which it is based are not conceded or proved as a part of the case.

While the defendant stated the distance from the target to the skin by measurement to be 15 inches, another witness, who was the only person present aside from the defendant during the treatment, testified that such distance was from 10 to 12 inches. A positive statement of the distance, arrived at by actual measurement, certainly should be taken against an estimate or guess, and, if the question involved only which of the two methods was the more accurate, this court would be willing to agree with the defendant that no conflict was created. But the question also involved the veracity of the witnesses. The jury might have concluded that the defendant did not measure the distance at all, and that his statement that he did was not true. Where there is a conflict in the evidence, the weight and credibility to be given the witnesses is always a question for the jury. If the jury believed the testimony of this other witness, the length of the treatment should have been limited, according to the defendant's own testimony, to between thirteen and fourteen minutes, whereas it lasted thirty minutes. If the target was only 10 or 12 inches from the skin, under the expert testimony, the treatment was improper, and the defendant in its administration failed to use the care and skill usually exercised by the members of his profession similarly situated. So the court concludes that there was sufficient evidence of negligence or want of skill to take the case to the jury.

The negligence or want of skill in administering the roentgen-ray treatment, even if established, was not enough to entitle the plaintiff to recover. She must go further and show that the injury suffered in such treatment caused the death of her intestate or hastened such death. The defendant contended that all the evidence was to the effect that the woman died from cancer. It was true that two physicians testifying as experts said that in their judgment she died of sarcoma or cancer, and no one testified that the roentgen-ray burn caused her death, or hastened it, or contributed to it. Notwithstanding, this court thinks that the physical facts justified the trial court in submitting to the jury the question as to whether the burn received in the treatment caused or contributed to the woman's death, the evidence showing a swelling of her stomach and leg, blisters thereon, inability to rest, loss of sleep, and continuous pain and suffering, all of which came immediately after the burn, and doubtless were caused by it.

The rule seems to be that a physician who has attended a party is not disqualified to testify as an expert concerning such party's ailment, when he can disregard what he has learned in communicating with and examining such patient, and make his answers solely on the facts as related in hypothetic questions.

Expert witnesses may well be asked to explain the customary and correct methods employed by medical men in good standing in administering roentgen-ray treatments, for the purpose of guiding the jury in determining whether in the given case the defendant exercised ordinary care. Such customary and correct methods so detailed have no other purpose than to show the jury how the profession acts when exercising ordinary care and caution, and to establish for the jury's guidance the standard or degree of care to be employed by it in arriving at its verdict. The degree of care of a physician in good standing, operating roentgen-ray machines, is the same as physicians and surgeons in the general practice. This has been numerously decided.

Engagement of Hospital—Patient Committing Suicide

(Pangle v. Appalachian Hall (N. C.), 131 S. E. R. 42)

The Supreme Court of North Carolina affirms a judgment of nonsuit in this action brought by an administrator to recover damages for the death of one Suber and tried on allegations and denials that the man came to his death by reason of the defendant's negligence in failing properly to care for him while a patient in its hospital, which resulted in his committing suicide. The court says that the man's physician, who took him to the hospital, testified that the man was then in a depressed mental condition, bordering on melancholia; that he informed one of the managers of the hospital of the man's condition, as he had observed it, and told him how the man had recently spent a day in the graveyard, near his home, with a shotgun in his hands, under conditions which indicated suicidal tendencies. A little more than a month after he was taken to the hospital, where patients were treated for mental and nervous diseases, for private gain, the man committed suicide by hanging himself with a rope.

The only evidence as to how the suicide occurred was contained in a letter written by the manager of the hospital to the physician, following the man's death. A portion of that letter, in which the writer stated that the man had tried to jump in front of a truck about two weeks prior to his death, and which was offered to fix the defendant with further notice of the patient's suicidal mania, was excluded on objection by the defendant. The evidence was clearly incompetent, and the trial court committed no error in withholding it from the jury. The authorities in North Carolina are all to the effect that what an agent says relative to an act then being done by him within the scope of his agency is admissible as a part of the res gestae (essential circumstances of the case), and may be offered in evidence either for or against the principal; but what the agent says afterward, and merely narrative of a past occurrence, though his agency may continue as to other matters, or generally, is only hearsay, and not competent as against the principal. With that letter excluded, the supreme court thinks that the trial court properly held that the plaintiff had failed to make out a case sufficient to go to the jury on his allegations of negligence.

There can be no question about the liability of a privately owned or corporate hospital, conducted for individual gain, and not for charitable purposes, for damages to its patients resulting from negligence attributable to the agents of such hospital. Ordinarily, when a hospital like the present one undertakes to treat a patient without any special arrangement or agreement, its engagement implies three things: (1) That its physicians, nurses and attendants possess the requisite degree of learning, skill and ability necessary to the practice of their profession, and which others similarly situated ordinarily possess; (2) that its physicians, nurses and attendants will exercise reasonable and ordinary care and diligence in the use of their skill and in the application of their knowledge to the patient's case; and (3) that its physicians, nurses and attendants will exert their best judgment in the treatment and care of the case. In the application of this general principle, such hospitals have been held liable for the negligent failure of their officers or employees to guard and restrain insane or delirious patients and prevent them from doing injury to themselves. But this court need not enter on a discussion of general principles, which are well established, because in the instant case the plaintiff offered no sufficient evidence of the defendant's negligence. Allegations alone will not do; he must have some evidence also in order to support a recovery.

Convicted as Abortionist; Acquitted of Manslaughter

(Werner v. State (Wis.), 206 N. W. R. 898)

The Supreme Court of Wisconsin says that the verdict of the jury in this case was difficult to understand. The jury found defendant Werner, a physician and surgeon, guilty of using an instrument with intent to produce a miscarriage, and at the same time acquitted him of manslaughter. These conclusions seemed irreconcilable. If he committed the abortion, he was certainly responsible for the death of the deceased. If it were a verdict in a civil case, this court would probably say that it was inconsistent and would not permit it to stand. But this was a criminal case. This court's power over the verdict was somewhat different. This court could not review the verdict of the jury in acquitting the defendant of the charge of manslaughter. This court could not reverse the verdict of guilty, if there was the proper amount of evidence to support it. It was not at all improbable that the jury felt that the defendant would be sufficiently punished by his conviction of the lesser offense. However, this court need not speculate on the process of reasoning by which the jury arrived at its verdict. If it was wrong, it was wrong only so far as it acquitted the defendant of manslaughter. While the trial court erred in excluding some evidence, it was evidence of very slight probative value, and this court cannot believe that its exclusion amounted to prejudicial error. On a very thorough consideration of the entire case, this court comes to the conclusion with considerable assurance that the judgment of conviction of using an instrument with intent to produce a miscarriage should be affirmed.

It was contended that the evidence failed to show that the deceased was pregnant on the date in question. It might be readily conceded that, if it were necessary to establish this fact by the testimony of the physicians alone, the finding of pregnancy would rest very much in doubt. However, there were many other circumstances disclosed by the record which did establish very satisfactorily the fact that she was pregnant during the time she was in the defendant's office immediately preceding her death. There was here a woman who, concededly, believing herself pregnant, repaired to a physician's office concededly for the purpose of treatments by that physician, and there was the further conceded fact that, while in his office, there was an actual invasion of the uterus. In the light of all these facts, the conclusion was permissible, if not irresistible, that she was in a pregnant condition when she went to the physician's office.

The defendant attempted to show by the testimony of two women that the deceased had talked to them on prior occasions about her pregnant condition, and that she told them she had used instruments on herself to induce flowing. This testimony was offered on the theory that the defense had the right to introduce prior statements made by the deceased which contradicted or tended to contradict her dying declaration that she was four months pregnant when she went to the defendant's office. The fact that menstruations are not usual during pregnancy perhaps raises a presumption that there is no pregnancy at times when menstruations occur, and this court is quite convinced that it would have been entirely proper to receive this evidence, and that its exclusion was error; but the court thinks that the value of such evidence would have been very slight, and that, in view of all the circumstances which indicated the woman's pregnant condition at the time in question, its exclusion could not be considered prejudicial.

The defendant admitted on cross-examination that fifteen or twenty years before he had been convicted of a violation of section 5480 of the federal statutes. He was permitted to explain that the offense for which he was convicted was a fraudulent use of the mails, but he was not allowed to make any further explanation. This court thinks that it was within the discretion of the trial court as to whether the examination along this line should proceed any further.

Practice and Profits of Chinese Doctor—Good Will

(Gouy Shong v. Chew Shee et al. (Mass.), 150 N. E. R. 225)

The Supreme Judicial Court of Massachusetts says that Joe Pang Suey, who died in April, 1917, left approximately $200,000 in cash in the house where he lived, besides other personalty. For several years before that time he was engaged in business as a Chinese doctor, practicing medicine in Boston without any certificate or authority required by section 2, chapter 112, general laws of Massachusetts. He carried on his business under the name of the Pang Suey Herb Company. Ninety per cent of his patients were white persons. He sold small amounts of tea and rice, but his real business was the practice of medicine, and these sales were a mere cover. The sale of herbs was in connection with the practice of medicine, that being the medicine dispensed by him. In November, 1916, on account of difficulties with the authorities, he arranged with a registered physician to come to his place of business on two days each week to examine new patients, who came on those days. The physician would make a diagnosis of these patients and turn them over to him or to his assistant, who would then prescribe for them according to Chinese methods. This service, rendered by the physician before the enactment of the statute prohibiting such service (St. 1917, c. 55, sec. 1), was for the purpose of protecting Joe Pang Suey and his assistant from criminal prosecution. The assistant, Joe Gouy Shong, who, in August, 1917, was appointed administrator of the estate of Joe Pang Suey, purchased of the servant who attended the latter in his last illness the business in question, which included the fixtures, furniture, herbs and alleged good will, although the servant had no authority to make the sale. Patients continued to come in the same numbers until 1922, when the business became less profitable. Many of those treated were former patients of the deceased. The widow and a son of the deceased offered to prove that the business of the deceased, which after his death was carried on by the administrator on his own account, was very profitable, netting him not less than $50,000, but this offer of proof was excluded by the probate court, when it allowed the account of the administrator.

On its findings, the probate court ruled that the business engaged in by the deceased, and after his death by the administrator, was unlawful and illegal; and that the administrator was not chargeable as administrator with any fees or emoluments received by him for his services as a so-called Chinese doctor, after the death of Joe Pang Suey. An examination of the evidence showed that the findings and rulings were well warranted. The evidence made it plain that both the deceased and his successor in business, the administrator, were engaged in the practice of medicine without any lawful authority and in violation of section 6, chapter 112, of the general laws of Massachusetts, and earlier statutes to the same effect. The employment of the physician during a portion of the time to examine and make a diagnosis of patients did not make the acts of the deceased or of the administrator lawful. The acts of each in prescribing and dealing out medicine were in violation of law. To prescribe and furnish medicines is to practice medicine within the meaning of the statute.

Whether there can be a good will attached to the practice of a physician after his death, which passes as an asset to his estate, or whether it is something purely personal, depending on the confidence reposed in his skill and ability, and after his death has no real intrinsic value, the court is not here called on to decide. It would be contrary to sound principles of the law to hold that there could be any good will connected with an illegal business. It would be equally subversive of well settled equitable precedents to compel an accounting for money so received, or to account for money obtained as the result of unlawful transactions.

The heirs of the estate of the deceased could have no greater right to an accounting for profits resulting from such a business than the deceased would have had in his lifetime if his unlawful business had been diverted by another. The contention of the widow and the son that they were entitled to secure the fruits of this business could not be sustained. A court of chancery will not lend its aid to compel an accounting for money received in the conduct of a business in violation of a statute enacted to protect the safety, health and welfare of the public. The fact that the heirs did not participate in the illegal business was not material. By reason of the failure of the administrator to account for profits received by him, the estate lost nothing which it was entitled to receive. Its assets could not be enhanced by gains obtained by the administrator while engaged in a criminal enterprise.

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Colorado Springs, Sept. 13-18. Dr. Luther C. Peter, N. E. Cor. Chestnut and 20th Streets, Philadelphia, Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Chicago, Sept. 20-22. Dr. James E. Davis, 111 Josephine Ave., Detroit, Secretary.

American Electrotherapeutic Association, Atlantic City, Sept. 8-11. Dr. Richard Kovacs, 223 E. 68th Street, New York City, Secretary.

Colorado State Medical Society, Colorado Springs, Sept. 21-23. Dr. F. B. Stephenson, 460 Metropolitan Building, Denver, Secretary.

Idaho State Medical Association, Sandpoint, Sept. 2-5. Dr. J. N. Davis, Kimberly, Secretary.

Indiana State Medical Association, West Baden, Sept. 22-24. Mr. T. A. Hendricks, Hume-Mansur Building, Indianapolis, Executive Secretary.

Kentucky State Medical Association, Frankfort, Sept. 20-23. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Michigan State Medical Society, Lansing, Sept. 14-17. Dr. F. C. Warnshuis, Powers Theatre Building, Grand Rapids, Secretary.

Missouri Valley, Medical Society of the, Council Bluffs-Omaha, Sept. 15-17. Dr. Charles Wood Fassett, 115 East 31st St., Kansas City, Mo., Sec'y.

Nevada State Medical Association, Reno, Sept. 24-25. Dr. H. J. Brown, Gray-Reid Building, Reno, Secretary.

Wisconsin, State Medical Society of, Madison, Sept. 15-17. Mr. J. G. Crownhart, 153 Oneida Street, Milwaukee, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to The Journal in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

31:763-914 (June) 1926

*Asthma in Children. I. Etiology. M. M. Peshkin, New York.—p. 763.
*Tuberculosis of Abdominal Lymph Nodes: Roentgen-Ray Diagnosis. E. C. Dunham and A. M. Smythe, New Haven, Conn.—p. 815.
*Arachnodactylia: Association with Congenital Heart Disease. R. K. Piper and E. Irvine-Jones, San Francisco.—p. 832.
*Diabetes in Infant. C. De Lange, Amsterdam.—p. 840.
*Fever in New-Born Infant. F. L. Adair and C. A. Stewart, Minneapolis.—p. 846.
*Prophylaxis of Varicella with Vesicle Fluid. R. M. Greenthal, Milwaukee.—p. 851.
*VII. Passage of B. Coli Through Kidney with Acute Staphylococcic Lesions. H. F. Helmholz and M. R. Bowers, Rochester, Minn.—p. 856.
Disease of Genito-Urinary Tract in Children. R. D. Herrold, Chicago.—p. 863.

Asthma in Children.—One hundred consecutive cases of asthma in children were tested by Peshkin in a routine manner with ninety-seven food, epidermal, pollen, bacterial and dust proteins by the cutaneous scratch method, and were observed for a period of from one to four years, the average being two and one-third years. Asthma is divided into three main groups, with their frequency of occurrence as follows: protein sensitive, 79 per cent; nonprotein sensitive, 18 per cent, and para-asthma (a new term), 3 per cent.

Tuberculosis of Abdominal Lymph Nodes.—In a group of 120 children with positive tuberculin tests, twenty-one, or 17 per cent, had roentgenographic evidence of calcified tuberculous lymph nodes. The shadows in the roentgenograms were of characteristic shape and appearance; in the lateral view they lay anterior to the vertebral column. They persisted in repeated plates and after evacuation of the intestinal contents. Dunham and Smythe state that the demonstration of calcified nodes in the abdomen is of value in establishing the locus of a tuberculous lesion and in helping to differentiate the condition from other acute abdominal conditions, such as appendicitis, sarcoma of the kidney, renal tuberculosis or stone in the kidney. By frequent repetition of abdominal plates, evidence should be obtained as to whether calcification is progressing or whether the calcified nodes are increasing or decreasing in size and number.

Arachnodactylia.—Arachnodactylia, or "spider digits," is a condition first described in 1896 by Marfan. It is characterized by the striking length and slenderness of the extremities, and differentiated from the gigantism of glandular dystrophy by the almost invariable accompaniment of congenital anomalies such as cardiac defects, webbing of the fingers, dislocation of the lenses, and many other conditions. Piper and Irvine-Jones give a detailed report of one case and review the literature.

Diabetes in Infant.—De Lange's patient died at the age of 2 years and 2 months. The onset of diabetes was at the age of 8 months.

Fever in New-Born Infant.—The study made by Adair and Stewart indicates that high external temperatures at least influence the incidence of fever among new-born babies. Additional factors apparently contributing to the condition are the subnormal fluid intake and excessive loss in weight, characteristic of babies having fever during the new-born period. The prompt subsidence of the fever on the liberal administration of fluids strongly suggests that dehydration is a very important causative factor.

Prophylaxis of Varicella.—The efficacy of varicella vesicle fluid in checking the spread of varicella was investigated by Greenthal. Thirty-six persons were vaccinated against varicella. There were nineteen "takes," sixteen negative reactions, and one patient left the hospital before the eighth day. No cases of varicella developed in those inoculated either successfully or unsuccessfully. The duration of the immunity induced by this procedure was less than eighteen months in one instance and more than six weeks in another. The use of varicella crusts to produce vaccine was not successful in the few instances when it was tried. Inoculation of guinea-pigs with varicella virus, using the coal tar method of Teague and Goodpasture, was unsuccessful.

Kidney: Filter for Bacteria.—The presence of staphylococcic lesions of the renal parenchyma and pelvis, according to Helmholz and Bowers, does not predispose to the rapid passage of colon bacilli into the urine. Active diuresis produced by sucrose does not force bacteria through the infected kidney in less than four hours. The colon bacillus introduced intravenously does not tend to become a secondary invader in the urinary tract in the presence of staphylococcic lesions of the kidney in the rabbit. Staphylococci and colon bacilli introduced simultaneously into the vein of a rabbit do not appear simultaneously in the urine.

American Journal of Hygiene, Baltimore

6:319-505 (May) 1926

Chilomastix Gallinarum. W. C. Boeck and M. Tanabe, Boston.—p. 319.
Biologic Studies on Genus Strongyloides Grassi, 1879. J. H. Sandground, Boston.—p. 337.
Epidemiology of Scarlet Fever. A. S. Pope, Boston.—p. 389.
*Epidemiology of Malaria in Palestine. I. J. Kligler, Haifa, Syria.—p. 431.
Appraisal of National Health Administration. J. B. Grant, Peking.—p. 450.
*Epidemiologic Study of Pneumonia and Mode of Spread. M. J. Rosenau, L. D. Felton and R. M. Atwater, Boston.—p. 463.
*Oral Infection with Ancylostoma. S. Yokogawa and T. Oiso, Taihoku, Formosa.—p. 484.
*Serial Transmission of Chicken Tumors by Means of Injection of Leukocytes and Plasma. M. R. Lewis and H. B. Andervont, Baltimore.—p. 498.

Epidemiology of Malaria in Palestine.—An hypothesis is advanced by Kligler to explain the predominance of *Plasmodium vivax* in the spring and the early summer, and of *P. falciparum* in the late summer and early fall. It is argued that just as the different species of anopheles have different temperature optima, so the different species of parasites may also have different temperature optima.

Epidemiologic Study of Pneumonia.—Rosenau, Felton and Atwater put on record observations made in the winter of 1923-1924, in Boston, regarding the distribution of pneumococci among healthy persons, in an attempt to trace the transmission of the pneumococci between one case and the next. Of fourteen healthy carriers in the control group, not one gave a history on direct question which revealed the source of the fixed type organism present. In short, the channels of the spread of the pneumococcus are past finding out from the history of contacts usually available. These studies show that the distribution of pneumococcus types, according to the age of the carrier, is practically even. In other words, pneumococci occur in the throats of carriers without special relation to the age of the carrier.

Oral Infection with Ancylostoma.—Yokogawa and Oiso assert that, when the mature larvae of *Ancylostoma caninum* are given to guinea-pigs, rabbits or mice by mouth, most of them penetrate the wall of the alimentary canal and migrate to the lungs through the blood stream and the lymphatics, in the same way as following skin infections, and there go down again into the alimentary canal via the bronchi, trachea, larynx, pharynx and esophagus. Some of the larvae ingested by these animals may first migrate into the abdominal cavity, boring through the wall of the alimentary canal and from there penetrate the liver or into the pleural cavity and the lungs, and then take the migratory course, as above, to the alimentary tract. On the other hand, when the mature larvae of *Ancylostoma caninum* are given by mouth to the proper host, the dog, they generally do not travel in the body of the host, but grow in the alimentary canal without any such migration. The fact, therefore, that, in the case of skin infections the larvae pass through the lungs, has no special connection with the digestive juices, but is a case of force majeure, the larvae being inevitably carried or guided there by the blood or lymph stream.

Experimental Transmission of Tumors by Blood.—In the experiments done by Lewis and Andervont, two tumors, the Rous sarcoma and the Carrel indol tumor, were passed from chicken to chicken by means of the blood. Either the plasma or the washed leukocytes of a chicken that had a well developed tumor were employed for transmission. In a few instances a transplant from a tumor, previously produced by means of the blood, was utilized. Every transplant, even though taken from a tumor after several passages by way of the blood, resulted in a tumor in both the Carrel and the Rous series. These tumors developed more rapidly than did those obtained from the injections of the blood. So far, there has been a higher percentage of tumors resulting from the injection of the leukocytes than from the plasma.

American Journal of Medical Sciences, Philadelphia

171: 625-780 (May) 1926

Advancement of Epidemiology Through Experiment. H. S. Flexner, New York.—p. 625.
*Relationship of Sulphemoglobinemia to Hepatic Deficiency. A. T. Todd. Bristol, England.—p. 635.
*Sickle-Cell Anemia. H. B. Anderson, Johnstown, Pa.—p. 641.
Hypertension. W. E. Post and E. J. Stieglitz, Chicago.—p. 648.
*Retrograde Capillary Pulsations in Heart Failure. C. S. Danzer, New York—p. 654.
*Blood Sugar in Status Thymicolymphaticus: Cause of Sudden Death. A. B. MacLean and R. C. Sullivan, New York.—p. 659.
*Familial Mediastinal Lymphogranuloma. A. Arkin, Vienna.—p. 669.
*Pathogenesis of Death from Burns. H. M. Greenwald and H. Eliasberg, New York.—p. 682.
Intra-Abdominal Pressure. I. Negative Intra-Abdominal Pressure as Normal Condition. G. W. Wagoner, Philadelphia.—p. 697.
Health Diagnosis in Children. W. R. P. Emerson, Boston.—p. 707.
Pneumopericardium from Radium Necrosis. J. Gottesman and A. J. Bendick, New York.—p. 715.
*Ephedrine in Asthma. W. S. Thomas, New York.—p. 719.
Cyanosis of Dementia Praecox: Gas Relationships of Blood. L. Segal and L. E. Hinsie, New York.—p. 727.
*Isolated Bilateral Paralysis of Glossopharyngeal Nerve Due to Cerebral Syphilis. B. J. Alpers, Philadelphia.—p. 740.

Sulphemoglobinemia from Use of Commercial Headache Powders.—A case of sulphemoglobinemia following prolonged use of commercial headache powders is described by Todd. The condition slowly cleared up on a diet that spared the liver. When proposals for discharge were made, a surreptitious use of the headache powders led to attacks of methemoglobinemia. No abnormal reducing substances were found in the blood, and the blood was found to fix sulphides no more readily than controls. Hepatic deficiency was proved present. Experimental injury to the livers of rabbits was followed by the appearance of the pigment in the blood; controls were negative. It is suggested that, among its many other functions, the liver detoxicates sulphur compounds ascending in the portal blood.

Sickle Cell Anemia.—The case reported by Anderson is unique in that it occurred in a negro boy born and reared in Pennsylvania, in that the color index was low (0.3) and in the fact that, during the first six weeks that the case was under observation in the hospital, it was impossible to demonstrate a progressive sickling of the fresh blood, and later, when the sickling phenomenon was noted, the red cells retained their bizarre shape for from seven to eight days.

Retrograde Capillary Pulse in Heart Failure.—A retrograde capillary pulse was observed by Danzer in a case of heart failure associated probably with tricuspid regurgitation. This was evident on direct macroscopic examination of the skin capillaries, as well as in the phenomena accompanying the determination of capillary blood pressure. Danzer suggests that the presence of a retrograde capillary pulse may be of value in the diagnosis of doubtful cases of tricuspid insufficiency or severe venous stasis.

Blood Sugar in Status Thymicolymphaticus.—In three cases of status thymicolymphaticus, MacLean and Sullivan found the blood sugar values to be low (42, 52 and 57 mg. per hundred cubic centimeter). In one case of suprarenal hemorrhage, a blood sugar of 25 mg. per hundred cubic centimeters was found. In six cases of convulsions produced by conditions other than status thymicolymphaticus, the authors found the blood sugar normal or increased above normal. In six cases of enlarged thymus shown by roentgenograms, they found five blood sugars within normal limits and one very slightly decreased. In six cases in which the blood sugar was determined within half an hour before death on patients with diseases other than status thymicolymphaticus, the values were normal or above normal. Acute suprarenal insufficiency is suggested as the immediate cause of sudden death in status thymicolymphaticus.

Familial Mediastinal Lymphogranuloma.—Arkin reports two cases of mediastinal lymphogranuloma, and one of "mediastinal tumor" probably also a lymphogranuloma, in one family, all three patients being men. The first patient died of mediastinal tumor in 1899, aged 34. His nephew (his brother's son) died in 1920, of mediastinal lymphogranuloma, aged 23. The son, aged 27, has been suffering since 1922 of a mediastinal lymphogranuloma. It developed twenty-three years after the death of the father. Arkin assumes a familial predisposition to mediastinal Hodgkin's disease in these cases.

Pathogenesis of Death from Burns.—Two clinical cases of burns are reported by Greenwald and Eliasberg with marked hypoglycemia. Experiments on ten rabbits were carried out to study the effects of superficial burns on the blood sugar content of the organs concerned with carbohydrate metabolism. In rabbits the cause of death may be divided into two stages: (*a*) Initial stage, due to shock, which is accompanied by a high blood sugar content due to hyperactivity of the suprarenals; (*b*) secondary stage, due to degenerative changes, particularly in the suprarenals. The administration of epinephrine is to be restricted only to the secondary stage of suprarenal exhaustion, and is contra-indicated in the primary stage.

Ephedrine in Asthma.—Ephedrine, administered by mouth to a series of twenty patients suffering from asthma, has given relief to all but three. Thomas regards it as an important substitute for epinephrine as a palliative remedy. In certain respects and in certain cases, the newer drug is to be preferred.

Cerebral Syphilis Causes Glossopharyngeal Paralysis.—A case is presented by Alpers of a white man, aged 63, who complained of trouble in swallowing solid food, who showed definite bilateral paralysis of the glossopharyngeal nerve with involvement of no other cranial nerves, and with preservation of taste over the posterior third of the tongue. There was evidence of syphilis clinically and serologically, and under specific treatment the paralysis disappeared and has not recurred. Alpers concludes that in all probability there was no involvement of the tractus solitarius, and there were probably definite lesions either in the dorsal nucleus or in the nucleus ambiguus.

American Journal of Ophthalmology, Chicago

9: 409-488 (June) 1926

Ocular Findings in Addison's Disease. A. L. Brown, Cincinnati.—p. 409.
Point Focal and Bifocal Lenses in Practice. A. Verwey, Durban, South Africa.—p. 410.
Detachment of Retina with Coloboma of Iris and Choroid. J. Komoto, Tokyo, Japan.—p. 414.
True Filial Teratoma and Cyst in Orbit of New-Born Child. J. A. Kearney, New York.—p. 416.
Expulsive Choroidal Hemorrhage After Cataract Extraction. H. V. Würdemann, Seattle.—p. 427.
Interstitial Keratitis. L. J. Goldbach, Baltimore.—p. 431.
Operation for Juvenile Cataract in Two Stages. G. H. Bell, New York.—p. 433.
Pericentral Folds in Descemet's Membrane, Following Parenchymatous Keratitis. R. V. Heydt, Chicago.—p. 435.
Vossius Ring Cataract. S. D. Durr, San Diego, Calif.—p. 436.
Microphthalmus, Miosis and Calcified Lens. J. J. Horton, Eagle Pass, Texas.—p. 437.

Annals of Clinical Medicine, Baltimore

4: 773-850 (April) 1926

Economic Problems of Internal Medicine. C. G. Jennings, Detroit.—p. 733.
Preparation and Practice in Medical Education. C. C. Little, Ann Arbor, Mich.—p. 781.

*Intestinal Origin of Pernicious Anemia. K. Faber, Copenhagen.—p. 788.
*Physiology of Pancreas. V. External Pancreatic Secretion. A. C. Ivy, Chicago.—p. 798.
Liver from Standpoint of Investigator, Physician and Surgeon. G. W. Crile, Cleveland.—p. 806.
*Pathology of Some Arterial Diseases. O. Klotz, Toronto.—p. 814.
Therapeutics of Arteriosclerosis and Essential Arterial Hypertension. A. R. Elliott, Chicago.—p. 829.

Intestinal Origin of Pernicious Anemia.—Faber reviews the available evidence which strengthens his belief that pernicious anemia has its origin in intestinal intoxication.

External Pancreatic Secretion.—Ivy is convinced that there is a cephalic phase of external pancreatic secretion, although an absolutely crucial experiment has not yet been performed. All experiments performed up to the present time have failed to indicate the existence of a gastric phase of external pancreatic secretion. Ivy and Farrell have been successful in transplanting the entire tail of the pancreas subcutaneously in the region of the mammary gland. Such a transplant secretes continuously a small amount of secretion and is stimulated by the injection of a meal. This proves unequivocally a humoral mechanism for pancreatic secretion. When tenth normal or one hundred and twentieth normal hydrochloric acid is applied to the mucosa of a Thiry fistula, or a subcutaneously transplanted loop of the jejunum, the pancreatic transplant secretes. This proves a hormone mechanism. Whether such a mechanism functions normally is discussed; and the opinion is expressed that it does function in normal digestion. When olive oil is applied to the mucosa of a Thiry fistula of the jejunum, the pancreatic transplant does not secrete; if so, very slightly. The neutralized digestive products of olive oil do stimulate when applied. These facts demonstrate that several mechanisms are concerned in the causation of the intestinal phase of external pancreatic secretion.

Pathology of Arteriosclerosis.—One of the most important features to recognize in connection with arteriosclerosis, Klotz states, is that its lesions are not of one quality alone but that there is quite a variety of processes that differ very essentially among themselves and which have a different origin. Physicians are prone to use the term "arteriosclerosis" carelessly in applying it to the scleroses of arteries in different portions of the body as if the lesions were all the same and had both a common manner of development and a common effect on the circulatory system. This fact must be appreciated by the clinician if he hopes to correlate his studies with those of the pathologist. Arteriosclerosis at times makes its appearance as a generalized reaction involving a great number of arteries of different parts but, on the other hand, it is much more common to find arteriosclerosis localized to a single system of vessels or to a group of vessels so that, though there may be an outstanding sclerosis of the arteries of one organ, those in another region are quite unaffected. Localized arteriosclerosis may be encountered in the arteries of the extremities at one time, or in the heart, the kidney or the brain, or various combinations of these may be encountered, but it is impossible to prophesy the presence of scleroses of hidden arteries of internal organs by the presence of hardened arteries in the periphery.

Archives of Dermatology and Syphilology, Chicago

13: 737-864 (June) 1926

Pemphigus: Combining Features of Lupus Erythematosus. F. E. Senear and B. Usher, Chicago.—p. 761.
Pathogenesis of Fox-Fordyce Disease. W. Pick, Prague, Czechoslovakia.—p. 782.
Fox-Fordyce Disease Associated with Hyperthyroidism. E. W. Netherton, Cleveland.—p. 794.
Cardiovascular Disease as Complication of Generalized Neurofibromatosis. G. F. Clark and E. G. Wakefield, Washington, D. C.—p. 806.
*Epidermomycosis of Sole Caused by Monilia and Yeast. M. Wachowiak and M. S. Fleisher, St. Louis.—p. 815.
Lichen Simplex of Scalp. A. W. Stillians, Chicago.—p. 819.
*Failure of Early Abortive Treatment of Syphilis. I. C. Sutton, Hollywood, Calif.—p. 822.

Epidermomycosis of Sole.—From two cases of epidermomycosis of the plantar surface which clinically were apparently identical, Wachowiak and Fleisher have been able to isolate different organisms in each case. In the one case they found a monilia, in the other an unidentified yeastlike organism, which may possibly be classed as *Cryptococcus*.

Failure of Early Abortive Treatment of Syphilis.—Immediately after exposure, Sutton's patient was given 0.45 Gm. of neo-arsphenamine intravenously with instructions to return the next day for another injection, which she did not do. Six weeks later, she returned with an early maculopapular syphilid over her body, a general glandular enlargement and a few superficial mucous membrane erosions in the mouth. No primary lesion was demonstrated, although the vagina, rectum and throat were searched.

Archives of Neurology and Psychiatry, Chicago

15: 675-826 (June) 1926

Story of Glossopharyngeal Nerve. C. L. Dana, New York.—p. 675.
Human Adult and Embryo Anterior Horn Cells: Comparison of Form in Relation to Concept of Neurobiotaxis. W. M. Kraus and A. Weil, New York.—p. 686.
Case of Cervicodorsal Spina Bifida Occulta with Trophic and Sensory Disturbances and Cervical Hypertrichosis. M. Gozzano, Rome.—p. 702.
*Etiology of Epidemic Hiccup (Singultus): Relation to Encephalitis. E. C. Rosenow, Rochester, Minn.—p. 712.
Case of Hydrophobia with Negri Bodies in Brain. H. R. Viets, Boston.—p. 735.
*Chemical Changes in Spinal Fluid in Meningitis: Lactic Acid Content. M. Osnato and J. A. Killian, New York.—p. 738.
Yellow Spinal Fluid Associated with Tumor of Brain. M. W. Comfort, Rochester, Minn.—p. 751.
Neuropathology. S. T. Orton, Iowa City.—p. 763.

Etiology of Epidemic Hiccup.—A streptococcus, alike in morphology and with similar cultural characters and having similar immunologic reactions, was isolated by Rosenow from the infected atrium in twenty additional cases of epidemic hiccup, and with each strain, spasms of the diaphragm or other muscles were produced in animals. The organism was isolated from these animals and characteristic symptoms again induced on inoculation. It was demonstrated in the lesions and proved absent elsewhere by microscopic examination of sections. Similar experiments, made with streptococci from cases of poliomyelitis and other diseases of the nervous system, from poliomyelitis contacts, from normal controls, and from patients that had recovered from hiccup, gave strikingly different results. The possibility of an accompanying filterable virus (in the usual meaning of that term) being the cause of the spasms was excluded by the successful reproduction of characteristic symptoms with some of the strains after many rapidly made subcultures with the dead streptococci, and with filtrates of active cultures, the symptoms in the case of filtrates beginning in from one to three hours after injection. The close relationship believed to exist between epidemic hiccup and epidemic encephalitis, and indicated by epidemiologic findings, receives much support in these experiments.

Significance of Spinal Fluid Lactic Acid Fluctuations.—An increase of the lactic acid of the spinal fluid and of the blood was found by Osnato and Killian in nephritis and epilepsy following the convulsions. In epilepsy, the spinal fluid after the convulsions gave figures for lactic acid exceeding those for the blood obtained at the same time. Spinal fluids obtained from cases of meningitis showed high figures for lactic acid. The source of this increased formation of the lactic acid appears to be the cellular metabolism. In some instances, no decrease was noted in the sugar in fluids in which the lactic acid was increased above normal; in others, however, no reaction for sugar was obtained. In no instance did the increase in lactic acid account for all the sugar lost.

Archives of Surgery, Chicago

12: 1105-1272 (June) 1926

*Renal Counterbalance. F. Hinman, San Francisco.—p. 1105.
Gastric Motility. III. Mechanism of Pylorus. E. Klein, New York.—p. 1224.
Twenty-Ninth Report of Progress in Orthopedic Surgery. R. B. Osgood et al., Boston.—p. 1255.

Renal Counterbalance.—It is impossible to abstract this paper by Hinman because of its great length. In the main, however, the work represents an attempt to establish the clinical practicability of renal counterbalance to renal surgery.

Atlantic Medical Journal, Harrisburg

29: 507-586 (May) 1926

Spirochetal Infections of Man. R. P. Strong, Boston.—p. 507.
Carcinoma of Lactating Breast. E. J. Klopp, Philadelphia.—p. 520.
Surgery in Breast Infections. A. E. Billings, Philadelphia.—p. 522.
Roentgen-Ray Treatment of Inoperable Breast Cancers and Postoperative Treatment. W. F. Manges, Philadelphia.—p. 524.
Benign Tumors of Breast. J. H. Gibbon, Philadelphia.—p. 526.
Fundamentals in Slit Lamp Microscopy. G. O. Ring, Philadelphia.—p. 528.
Crystalline Lens as Seen with Slit Lamp. A. J. Bedell, Albany, N. Y.—p. 531.
Slit Lamp Microscopy in Everyday Practice. L. C. Peter, Philadelphia.—p. 533.
Leiner's Disease. J. D. Stevenson, Beaver, Pa.—p. 535.
*Dehydration Fever. R. M. Tyson and F. F. Borzell, Philadelphia.—p. 536.
*Congenital Obstruction of Esophagus. H. C. Flood, Pittsburgh.—p. 537.
Hysteria in Child Following Appendectomy. P. Nicholson, Ardmore, Pa.—p. 538.
Radiotoxemia with Death Following Roentgen-Ray Treatment of Enlarged Thymus. A. M. Dannenberg, Philadelphia.—p. 539.
*Congenital Absence of Bones in Two Male Infants. H. H. Perlman and L. S. Cohen, Philadelphia.—p. 541.
Polyuria in Four Year Old Child. J. D. Iams, Pittsburgh.—p. 543.
*Malaria in Treatment of General Paralysis. R. F. L. Ridgway and E. M. Green, Harrisburg, Pa.—p. 544.

Dehydration Fever.—Tyson and Borzell report the case of an infant, aged 5 days, who manifested symptoms of an esophageal obstruction. Examination of the esophagus by means of a barium solution showed the presence of a pressure in the middle third, sufficient to cause some obstruction. Attempts at deglutition caused an attack of dyspnea, cyanosis and mild convulsions. Roentgenograms showed what appeared to be an enlarged lymph gland pressing on the middle third of the esophagus. One treatment of 120 kilovolts at 18 inches distance, with a 3 mm. aluminum filter, 5 milliamperes for two minutes, was given. Gavage feeding was resorted to. The breasts were pumped, and breast milk used as long as available. The fever subsided. Cyanosis and convulsions did not recur, and the baby seemed to thrive. Artificial food was necessary because of failure of the breast milk. Four days later, another fluoroscopic examination with a barium solution showed that the obstruction had disappeared. Another roentgen-ray treatment was given. Gavage feeding was discontinued, and bottle feeding of a modified cow's milk formula was given. The baby was able to swallow without any difficulty. On the fifteenth day, the baby again began to vomit. There was no dysphagia. A careful observation during a feeding showed a well formed and easily observed peristaltic wave in the upper part of the abdomen. A diagnosis of pylorospasm was made. Thick cereal feedings were given, preceded by atropine in appropriate doses. Vomiting was controlled satisfactorily, and the baby continued to thrive. It was necessary to continue the atropine for four months. When the child was 3 months old, the mother noticed a peculiar crowing sound on inspiration. The roentgen ray showed enlargement of the thymic gland. A series of four roentgen-ray treatments was given during the following four months. The symptoms of enlarged thymus ceased. The baby thrived, and weighed 24 pounds (10.9 Kg.) at the end of the first year.

Congenital Obstruction of Esophagus.—The case reported by Flood belongs in the group showing defective development of the esophagus, with atresia and tracheal communication, accompanied by anomalous origin of the great vessels of the heart. The pulmonary artery, after giving off two branches, one to each lung, continued upward and a little outward, forming an arch, and then continued downward as the aorta. It had an opening for the vertebral arteries. It was quite a large vessel, as large as the normal infant aorta. The aorta proper emerged as a normal vessel, extended upward for a distance of 2.5 cm., where it bifurcated, forming the common carotid, right and left. Just beneath the right common carotid was a branch, forming the left subclavian. The connection between the aorta and the pulmonary vessel—the ductus arteriosis—was patulous. A small nodule noted in the large curvature of the stomach, on microscopic section, proved to be a piece of pancreatic tissue embedded in the wall of the stomach.

Congenital Absence of Bones.—Perlman and Cohen cite two cases; one was a congenital absence of the sternum and the other the congenital absence of the left tibia and fibula.

Malarial Treatment of General Paralysis.—Ridgway and Green report thirty-four patients suffering from general paralysis who were treated by inoculation with blood from one having malaria of the tertian type. Twenty-six of these patients recovered from the inoculated disease; seven died, and one failed to become infected. Of the twenty-six patients, five were not benefited by the treatment; nine were improved in greater or less degree, and twelve exhibited complete remissions. Seventeen of the number have been paroled from the hospital, and sixteen are still at home, many of them having reengaged in their former occupations. The results obtained in the series of cases prove that there may be no correspondence between the mental improvement and the changes in the physical signs of the disease nor in the serologic picture. Several of those manifesting complete remissions exhibited no favorable modifications in these respects. In only a small proportion of the cases did the Wassermann tests of the blood and the spinal fluid show changes which could be attributed to the malarial process. While physical signs were favorably modified in a number of instances, in no case did they all show a return to the normal.

Boston Medical and Surgical Journal

194: 1013-1056 (June 3) 1926

Old Lamps for New. W. W. Chipman, Montreal.—p. 1013.
Harelip and Cleft Palate. W. E. Ladd, Boston.—p. 1016.
Pelvic Inflammation in Women. I. H. Noyes, Providence, R. I.—p. 1025.
Use of Milk Injections in Pelvic Inflammation. J. Champlin, Jr., Westerly, R. I.—p. 1029.
Thermotherapy in Treatment of Pelvic Inflammation. W. H. Magill, Providence, R. I.—p. 1031.
Anaerobic Infection: Process. N. A. Dayton, Wrentham, Mass.—p. 1032.
Abuse of Rest in Cardiac Therapy. W. D. Reid, Boston.—p. 1039.

194: 1057-1104 (June 10) 1926

Educational Requirements for Twentieth Century Practice. C. F. Painter, Boston.—p. 1057.
Value of Iodine in Surgical Treatment of Exophthalmic Goiter. E. P. Richardson, Boston.—p. 1066.
*Tumor of Liver with Metastases in Heart and Peritoneum. S. L. Warren, Rochester, N. Y.—p. 1071.

Tumor of Liver with Metastases.—Warren relates the history of a patient, with an atypical history and an unusual area of pain, who was almost classified among the psychoneuroses, when a biopsy of what was apparently a fibroma of the skin disclosed the presence of a malignant tumor. Necropsy four months later showed a soft, reddish-black cellular tumor of the liver with globular metastases to the heart, pleura, the peritoneum along the mesenteric attachments of the intestine, the kidney, pancreas, spleen, ribs and several subcutaneous regions. Microscopically, the biopsy showed cells somewhat differentiated into blood vessel formation, while the necropsy study showed almost a complete loss of cell differentiation with very little connective tissue stroma, and the formation of nested cells, resembling nested Petri dishes, one inside the other.

Canadian Medical Association Journal, Montreal

16: 487-626 (May) 1926

Diagnosis and Treatment of Heart Disease. T. F. Cotton, London.—p. 487.
Cardiac and Renal Disease. I. M. Rabinowitch, Montreal.—p. 492.
*Classification of Diarrheas: Treatment. R. D. Rudolf, London.—p. 501.
Medical Aspects of Diseases of Large Bowel. A. H. Gordon, Montreal.—p. 505.
Differential Diagnosis of Upper Gastro-Intestinal Lesions. R. R. Graham, Toronto.—p. 508.
Management of Gastric and Duodenal Ulcer. D. C. Balfour, Rochester, Minn.—p. 516.
Etiology of Malignant Neoplasms. J. Loudon, J. M. McCormack and N. J. Howard, Toronto.—p. 522.
*Blood Changes in Rabbits Resembling Those in Pernicious Anemia Accompanying B. Welchii Infections. G. B. Reed, J. H. Orr and C. H. Burleigh, Kingston.—p. 525.
Tuberculosis of Tongue: Four Cases. C. K. P. Henry, Montreal.—p. 531.
Lung Expansion After Acute Empyema. K. D. Panton, Vancouver, B. C.—p. 534.
*Case of Chronic Nephritis Treated with Collip's Parathyroid Extract. E. H. Mason, Montreal.—p. 538.

Case of Status Epilepticus (Traumatica): Operation; Recovery. H. M. Robertson, Victoria, B. C.—p. 541.
Treatment of Diabetes Mellitus, With and Without Insulin. G. G. Duncan, Morristown, N. J.—p. 544.
Pyelitis in Infancy: Pathologic Study. B. Chown, Winnipeg.—p. 549.
*Control of Arsphenamine Treatment by Liver Function Tests. H. A. Dixon, W. R. Campbell and M. I. Hanna, Toronto.—p. 551.
Purpura with Intense Abdominal Pain as Late Complication of Scarlet Fever. R. Smith and T. A. Bertram, Dundas, Ont.—p. 555.
Treatment of Incomplete Abortion. E. Percival, Montreal.—p. 557.
Sudden Death in Status Lymphaticus. J. Miller, Kingston.—p. 559.
Rhinoplasty with Ivory Transplant. A. E. Lundon, Montreal.—p. 561.
Syphilitic Periostitis of Cervical Vertebra and Right Clavicle. L. C. Montgomery, Montreal.—p. 563.
Late Decompression of Lumbar Cord Following Injury. W. O. Stevenson, Hamilton.—p. 563.
Splenectomy. F. G. Finley, Montreal —p. 565.

Classification of Diarrheas.—Diarrheas are classed by Rudolf as high, middle or lower, depending on the portion of the tract that is at fault. Etiologically, diarrheas may be classed as nervous, purgative or organic. The treatment of the nervous type consists chiefly of psychic therapy, with the use of nerve sedatives; the treatment of the purgative type, by medicinal purgatives to get rid of the irritating contents of the bowel that are the cause of the trouble. The medicinal treatment of the organic forms is likely to be more difficult and consists in the use of protectives and astringents and often of opium in some form. When the condition is in the lowest portion of the tract, much of the therapy is best conducted from below. The treatment of mucous colitis is chiefly that of the general nervous condition, although local therapy has its place.

Welch Bacillus Infections with Blood Changes.—Reed, Orr and Burleigh show that a highly virulent strain of *B. welchii* may produce chronic or acute infection in rabbits depending on the age of the culture used. Rabbits suffering from acute or chronic infection with *B. welchii* develop a profound anemia characterized by a decrease in red cell numbers without a corresponding decrease in hemoglobin and by conspicuous anisocytosis. Quantitative examination of the degree of anisocytosis shows that it resembles that of pernicious anemia in man.

Parathyroid Extract in Chronic Nephritis.—A case of chronic nephritis, with acute depression of renal function, treated by parathyroid extract is reported by Mason. Coincidently with the administration of the parathyroid extract, the serum calcium returned to its normal level with a remarkable readjustment of the altered blood chemical determinations. It is suggested that the parathyroid extract functioned through causing an increased mobilization of calcium from the body's depots.

Control of Arsphenamine Treatment by Liver Function Tests.—Dixon et al. aver that the van den Bergh test has revealed additional points of interest in the pathology and treatment of arsphenamine intoxication and represents a distinct advance in its control. Incapacitating illness and, at times, permanent injury to the liver results from the use of arsphenamine in the treatment of syphilis. The van den Bergh reaction can be used to diagnose the early stages of injury while the patient is still in the stage of latent jaundice and while suitable measures can be taken to minimize the injury. It is of value also in the control of the more severe stages of arsphenamine jaundice and liver atrophy. The authors contend that arsphenamine treatment without adequate laboratory check on the injury induced by its use is quite as, or even more, unjustifiable than treatment without the Wassermann reaction or other laboratory control of the treatment of the primary disease.

Journal of Bacteriology, Baltimore

11: 305-392 (May) 1926

*Blood Agar Plate for Spore Forming Anaerobes. L. Thompson, Rochester, Minn.—p. 305.
Effect of Lactic Acid Bacteria on Acetone-Butyl Alcohol Fermentation. E. B. Fred, W. H. Peterson and M. Mulvania, Madison, Wis.—p. 323.
Dye Bacteriostasis. E. W. Stearn and A. E. Stearn, Pasadena, Calif. —p. 345.
Cellobiose as Aid in Differentiation of Members of Colon-Aerogenes Group of Bacteria. H. N. Jones and L. E. Wise, New York.—p. 359.
Electrophoretic Migration of Various Types of Vegetable Cells. C.-E. A. Winslow and M. F. Upton, New Haven, Conn.—p. 367.

Journal of Experimental Medicine, Baltimore

43: 725-884 (June 1) 1926

Geographic Distribution of Spontaneous Encephalitis in Rabbits. E. V. Cowdry, New York.—p. 725.
Organ Weights of Normal Rabbits. II. W. H. Brown, L. Pearce and C. M. Van Allen, New York.—p. 733.
Regeneration of Bacteriophage. II. Influence of Oxygen on Behavior of B. Coli Toward Lytic Principle. G. Shwartzman, New York.—p. 743.
Relation of Biliary Infections to Genesis and Excretion of Urobilin. P. D. McMaster and R. Elman, New York.—p. 753.
Effect of Certain Toxic Substances in Bacterial Cultures on Movement of Intestines. I. B. Paratyphosus B. E. E. Ecker and A. Rademackers, Cleveland.—p. 785.
Rôle of Reticulo-Endothelial System in Immunity. C. W. Jungeblut and J. A. Berlot, Albany, N. Y.—p. 797.
*Melanoma of Eye in Syphilitic Rabbit. W. H. Brown and L. Pearce, New York.—p. 807.
*Cultivation of Granules of Vaccinia Virus. E. C. Craciun and E. H. Oppenheimer, Baltimore.—p. 815.
Desquamated Endothelial Cells (Clasmatocytes) in Normal Mammalian Blood. F. R. Sabin and C. A. Doan, New York.—p. 823.
Fragmentation of Red Blood Cells: Phagocytosis of Fragments by Desquamated Endothelial Cells of Blood Stream. C. A. Doan and F. R. Sabin, New York.—p. 839.
*Etiology of Oroya Fever. I. Cultivation of Bartonella Bacilliformis. H. Noguchi and T. S. Battistini, New York.—p. 851.

Relation of Melanoma and Syphilis.—Brown and Pearce noted the development of a melanotic tumor in a defective eye of a syphilitic rabbit following repeated genital inoculations with *Spirochaeta pallida*. The appearance of the tumor coincided with the development of a syphilitic lesion in the same eye, suggesting a relation between the occurrence of the two lesions.

Cultivation of Vaccinia Virus Granules.—A technic is described by Cracium and Oppenheimer whereby vaccinia "granules" are separated from all other material of glycerolated vaccinia calf lymph and cultivated in vitro with embryonic tissues. These "granules" remain alive, as tested by rabbit corneal inoculation, for as long as seventy-one days, when grown in connection with growing tissue; they fail to remain potent if cultivated with dying cells, showing in this way the same characteristics as whole vaccine virus. The potency of the "granules" increases with the age of the culture under the first mentioned conditions. The fluid part of the vaccinia lymph which remains after the removal of all "granules" is impotent under all conditions.

Etiology of Oroya Fever.—A pure culture of a microorganism resembling in morphology and pathogenic action *Bartonella bacilliformis* has been obtained by Noguchi and Battistini from blood taken during life from a case of oroya fever which ended fatally. The blood taken at Lima and passed directly into a citrate solution and transported to New York at refrigerator temperature yielded positive cultures twenty-eight days after its withdrawal from the patient. The inoculation of cultures of *Bartonella bacilliformis* into *Macacus rhesus* produced infection and gave rise to effects which differ with the mode of inoculation. The intravenous injection of the culture into young macaques induces a prolonged, irregularly remittent fever. The organism can be cultivated from the blood over a long period, and it has been detected within the red corpuscles of the monkeys, reproducing the precise appearances observed in human cases of oroya fever. The intradermal injection of the culture into the eyebrow of young macaques gives rise to nodular formations rich in new blood vessels and showing the bacilliform organism within the endothelial cells. From the experimentally induced nodules, cultures of the organism are readily recovered.

Journal of Laboratory and Clinical Medicine, St. Louis

11: 707-808 (May) 1926

*Exsanguination-Transfusion in Treatment of Mercuric Chloride Poisoning. C. C. Haskell, J. R. Hamilton and W. C. Henderson, Richmond, Va.—p. 707.
*Nutrition in Tuberculosis. II. Experimental Tuberculosis: Influence of Vitamin Deficient Diets Thereon. M. I. Smith and E. G. Hendrick, Washington, D. C.—p. 712.
*Carcinoma of Stomach with Eosinophilia. E. Weiss, Chicago.—p. 733.
Standardized Method of Estimating and Reporting Hemoglobin Values. J. W. Lindsay, E. C. Rice and M. A. Selinger, Washington, D. C.—p. 737.

Anisocytosis and Increased Red Blood Cell Volume with Little or No Anemia. M. Warren, Portland, Me.—p. 743.
Bronchial Spirochetosis. T. L. Ramsey, Toledo, Ohio.—p. 751.
Pneumococcus Antibody Solution. F. M. Huntoon, Glenolden, Pa.—p. 759.
Probable Rôle of Bacteriophage in Streptococcus Infections. L. O. Dutton, Memphis, Tenn.—p. 763.

Exsanguination-Transfusion Treatment of Mercuric Chloride Poisoning.—Haskell and his associates believe that the results of their experiments on dogs prove that the exsanguination-transfusion method of treating mercuric chloride poisoning is distinctly injurious.

Experimental Tuberculosis and Vitamin Deficient Diet.—Experimental tuberculous infection in the albino rat is described by Smith and Hendricks. The albino rat, experimentally infected with *B. tuberculosis*, can be rendered susceptible to tuberculin shock by withholding fat soluble vitamin A from its diet. Experiments are described indicating that the tubercle infected rat deteriorates more rapidly than the noninfected control when maintained on a diet of low biologic value and low in fat soluble A. Liberal allowance of fat soluble A appears to afford protection against the early deterioration. It is not certain whether this indicates a lowered resistance in the albino rat to tubercle infection or an increased demand for vitamin A. The increased susceptibility to tuberculin shock of the infected vitamin A deficient rat appears to offer evidence in favor of the former view.

Carcinoma of Stomach with High Eosinophilia.—Weiss claims that his case is the first one reported of carcinoma primary in the stomach with high eosinophilia (31.8 per cent). Only six cases of carcinoma with such high eosinophilia have been reported in the literature. In none of the previous cases was the tumor located in the stomach. In one of these cases, an eosinophilia was found in the surrounding necrotic tissue and a direct connection was assumed between the necrotic tumor tissue (toxins) and the eosinophil infiltration. In the case under discussion, no eosinophilia was found in the tumor or surrounding tissue. A decrease of eosinophils, after the removal of the tumor, was observed (4.1 per cent). A few weeks after the operation the eosinophils showed again a rise (31.8 per cent), exceeding the eosinophilia previous to the operation (24.2 per cent); whether this postoperative eosinophilia was caused through metastatic growth of the tumor could not be determined. Neither the tumor extract nor the blood of the patient could produce eosinophilia in animals. Not the slightest phagocytic properties of the eosinophils, even in the presence of immune serum, could be detected.

Kansas Medical Society Journal, Topeka

26: 137-172 (May) 1926

*Lactic Acid Milk as Additional Food for Young Infants. F. C. Neff and T. G. Dillon, Kansas City, Mo.—p. 137.
*Acidified Milk in Infant Feeding. H. L. Dwyer, Kansas City, Mo.—p. 140.
Selection of Cases of Pulmonary Tuberculosis for Artificial Pneumothorax. S. H. Snider, Kansas City, Mo.—p. 142.
Ocular Disturbance from Exposure to Infra Red and Ultraviolet Rays. J. W. McKee, Kansas City, Mo.—p. 143.
Some Factors Other Than Specific Drugs in Treatment of Neurosyphilis. A. L. Skoog, Kansas City, Mo.—p. 146.
*Aortic Regurgitation in Young Adults. R. C. Davis, Kansas City, Mo.—p. 149.
*Relation of Nasal Disease to Bronchial Asthma. L. Clendening, Kansas City, Mo.—p. 154.
Fibrosis of Uterine Muscle. R. D. Irland, Kansas City, Mo.—p. 156.
*Abdominal Actinomycosis. F. C. Helwig, Kansas City, Mo.—p. 157.
Lingual Thyroid. M. J. Owens, Kansas City, Mo.—p. 160.
Some Complications of Diabetes Mellitus. R. H. Major, Kansas City, Mo.—p. 162.
Etiologic Factors in Mitral Stenosis: Two Cases. P. T. Bohan, Kansas City, Mo.—p. 165.

Lactic Acid Milk as Infant's Food.—The fifty cases reported by Neff and Dillon indicate that newly born infants, as a rule, do gain better when fed additional food in the form of lactic acid milk until sufficient breast milk is supplied. The value in this method lies not in the nature of the acid in the milk, but in the fact that the milk is rendered more digestible by being sour, and more food can be handled. Milk soured in other ways is probably just as good; in fact, for many years the authors have not infrequently used buttermilk when additional food is needed for the newly born. The usual formula has been: Holstein milk (whole), 8 ounces; lactic acid, U. S. P., 15 drops; water, 8 ounces; dark corn syrup, 1 ounce. The milk is boiled gently for five minutes, the scum removed and to each 8 ounces of the cooled milk is added 15 drops of the acid, stirring the milk when each drop is added. This formula is given to infants only during the first three or four days of their life or until the breast milk is established.

Acidified Milk in Infant Feeding.—By the addition of either lactic, hydrochloric, acetic or citric acid, Dwyer says, cow's milk is rendered more digestible, can be fed in greater concentration and thereby is useful in correcting digestive disorders and marasmus.

Aortic Regurgitation of Nonsyphilitic Origin.—Seven cases of aortic insufficiency are reported by Davis, none of which was caused by syphilis. Three electrocardiograms are shown, one of which shows very little change. There is a prolonged P-R interval in the other two. Two show left ventricular predominance. In one case, there was definite myocardial change as evidenced by the inversion of the T waves in leads II and III. Davis' experience is that nonsyphilitic endocarditis is the most frequent cause of aortic insufficiency in young adults.

Relation of Nasal Disease to Asthma.—Clendening recognizes a form of asthma, associated with and probably caused by chronic nasal disease. Attempts to prove these patients hypersensitive to foreign proteins have not been successful. The relationship between the nasal condition and the bronchial condition is not reflex, but is probably the result of direct infection from one to the other. Removal of the nasal infection is the first step in treatment.

Abdominal Actinomycosis.—A case of abdominal actinomycosis is reported by Helwig which started in the mucosa of the hepatic flexure of the colon and extended through the liver to the spleen, then up through the diaphragm into the lower lobe of the left lung without giving symptoms until the diaphragmatic involvement had taken place. The canary colored granules were demonstrated in the tissues before death, and the typical progressive involvement was seen at necropsy.

Medical Journal and Record, New York

123: 783-850 (June 16) 1926

*Relation of Dental Infection to Systemic Disease. R. L. Haden, Kansas City, Mo.—p. 783.
Placing of Thoracoplastic Cases in General Surgical Wards and Their Medical Care Thereafter. S. A. Knopf, New York.—p. 787.
Our Social Evasion. T. Burrow, Baltimore.—p. 793.
Syphilis in Its Relation to Eye Conditions. G. H. Bell, New York.—p. 796.
Relationship of Ophthalmoscopic Pictures to Arterial Disease. S. A. Agatston, New York.—p. 799.
Idiopathic Paralysis Agitans in Man Aged Thirty-Five. T. C. Fong, Washington, D. C.—p. 800.
Epithelioma of Lip Treated by Radiation. A. W. Jacobs, New York.—p. 803.
Cystoscope as Aid to Diagnosis. J. Schwartz, New York.—p. 804.
Roentgen Rays in Treatment of Diseases of Skin and Other Pathologic Conditions. S. Feldman, New York.—p. 805.
*Influence of Cervical Sympathectomy on Angina Pectoris. H. Lilienthal, New York.—p. 809.
Mitral Stenosis. M. Gordon, New York.—p. 811.
*Auricular Flutter. L. F. Bishop, New York.—p. 814.
*Direct Treatment of Heart Failure. E. E. Cornwall, New York.—p. 816.
Pupil as Index of Activity in Cardiac Lesions. J. Byrne, New York—p. 820.
Cardiazol, Heart Stimulant. G. L. Waldbott, Detroit.—p. 821.
*Suppuration of Nasal Accessory Sinuses as Portal of Entry of Infection in Diseases of Heart. W. Spielberg, New York.—p. 822.

Dental Infection and Systemic Disease.—Haden reports cases of duodenal and gastric ulcer, acute myocarditis, recurrent iritis, chronic pyelonephritis, subacute thyroiditis and acute facial paralysis as instances of systemic disturbances due to chronic periapical dental disease. Proof of the relationship between these conditions was obtained by animal experimentation.

Cervical Sympathectomy.—In the surgical treatment of angina pectoris, Lilienthal says, other things being equal, the procedure involving the least danger should be tried first, even though it consists of the mere blocking of painful sensations. An example of this therapy would be the alcohol blocking of the upper thoracic sensitive branches without incision. The question of operation must be decided in each instance by the cardiologist, the surgeon and the patient.

Auricular Flutter.—On account of its rather grave significance in most cases, Bishop says it is important to recognize auricular flutter when present so that proper treatment may be instituted without delay. A positive diagnosis can be made only by the electrocardiogram but in a person suffering from cardiac failure with an extremely rapid though regular ventricular rhythm, the possibilities of the presence of auricular flutter should always be considered. A typical example is reported, showing the importance of early diagnosis and treatment as a life saving measure.

Use of Digitalis in Heart Failure.—As a guide to the use of digitalis in heart failure, Cornwall asserts that laboratory experimentation, especially on animals, cannot altogether be trusted, as Mackenzie has said, because pathologic changes in the human organism can modify the effects of the drug and discredit inferences from such experimentation; clinical experience must largely determine its practical use.

Sinus Infections and Heart Disease.—Study of three cases has convinced Spielberg that the nasal sinuses do play an important rôle in cardiac pathology, particularly when definite pathology (in the nasal sinuses) can be demonstrated. The examination of a patient suffering from heart trouble should not be considered complete without a roentgen-ray examination of the nasal sinuses, and an interpretation of the latter made by a competent rhinologist.

Ohio State Medical Journal, Columbus

22: 474-568 (June 1) 1926

Relative Value of Cholecystography in Diagnosis of Abdominal Pathology. J. J. Coons, Columbus.—p. 493.
Practical Blood Chemistry. C. T. Way, Cleveland.—p. 499.
*Retention of Perfectly Formed Fetus in Abdominal Cavity over Half Century. E. J. McCormick, Toledo.—p. 501.
Interpretation of Behavior in Hysteria. C. C. Wholey, Pittsburgh.—p. 506.

Retention of Fetus in Abdominal Cavity for Fifty Years.—McCormick reports the case of a woman, aged 73, who came under observation because of a sudden attack of syncope accompanied by pain in the abdomen and general weakness. There was no paralysis, no loss of consciousness, no rise of temperature, and no elevation of pulse. Aside from the senile and cardiovascular changes which were responsible for the patient's condition at this time, there was a hard "fibroid like" mass filling the lower part of the abdomen and particularly prominent on the right side. It was not movable, and palpation caused no pain. Symptomatic treatment was instituted, but the patient died the day following admission. A necropsy was performed. The abdominal findings are of marked interest. A tumor filled the entire lower part of the abdomen and extended midway between the umbilicus and the ensiform cartilage. The omentum and transverse colon were adherent and completely enveloped the tumor on its anterior and lateral aspects. The tumor was adherent to the fimbriated end of the right tube. There was no apparent definite blood supply to the mass. The mass was dense and hard, the outline resembling a fetus. The uterus was small and atrophied. After superficial fibrous attachments had been removed, the appearance of an encapsulated fetus was clearly seen. The fetus was in the typical position as generally found in utero. The capsule was formed by the placenta and membranes with lime salts deposits. There was a history of a pregnancy fifty years previously. At nine months the patient felt labor coming on. There was a discharge of water from the uterus and also severe bleeding. The doctor in charge was with the patient all night watching for the baby to arrive, but there was no birth and the doctor thought that the baby had died. He made an examination and found no uterine pregnancy. Menstruation was never normal following this pregnancy. The patient was afterward examined by a surgeon who made a diagnosis of tumor or ovarian pregnancy, but advised that no operation be done as long as her health was good.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Bristol Medico-Chirurgical Journal

43: 73-126 (Summer) 1926

Uveo-Parotitic Paralysis. G. Parker.—p. 73.
Polyneuritis Preceded by Inflammation of Parotid, Lachrimal and Mammary Glands. B. Rogers and J. H. Bodman.—p. 84.
Operative Treatment of Meningitis. E. Watson-Williams.—p. 91.
Rigid Rest in Rheumatic Carditis. J. A. Nixon.—p. 96.

British Journal of Dermatology and Syphilis, London

38: 185-230 (May) 1926

Granuloma Fungoides (Tumeurs d'Emblée Type). H. C. Semon,—p. 185.
Pompholyx Eruption Due to Iodine. R. T. Brain.—p. 191.

38: 231-272 (June) 1926

Case of Espundia. F. P. Wilson and J. F. D. Shrewsbury.—p. 231.
Xeroderma Pigmentosum (Kaposi). M. Per.—p. 241.

British Journal of Ophthalmology, London

10: 241-304 (May) 1926

John Dalrymple, F. R. S., 1803-1852. R. R. James.—p. 241.
Trachoma in Palestine. N. Shimkin.—p. 247.
New Anatomic Notation of Visual Field. M. U. Troncoso.—p. 280.

10: 305-368 (June) 1926

Trigeminal Nerve and Its Ocular Lesions. L. Paton.—p. 305.

British Medical Journal, London

1: 929-976 (June 5) 1926

Why Hygiene Pays. A. Balfour.—p. 929.
Recent Advances in Surgery of Chest. H. S. Souttar.—p. 933.
Gastric Diagnosis. L. R. Broster.—p. 936.
*Method of Treating Asthma by Radiation. S. G. Scott.—p. 939.
Hematoma in Abdominal Wall Simulating Pelvic New Growth. W. E. Fothergill.—p. 941.
Rectal Anesthesia. R. B. Coleman.—p. 942.
Serous Meningitis: Repeated Lumbar Puncture; Recovery. D. M. Anderson.—p. 943.
Treatment of Yaws by Novarsenobillon. J. C. Franklin.—p. 943.
Acute Intussusception Successfully Treated by Rectal Inflation. B. S. Hollick.—p. 943.
Ocular Malformation. C. F. Ashby.—p. 944.
Twisted Ovarian Pedicle in Child. J. Morris.—p. 944.
Gangrene in New-Born. L. W. Hefferman.—p. 944.

Treating Asthma by Roentgen-Ray Bath.—Scott reports good results from the use of a roentgen-ray "bath"—that is, irradiation of the entire trunk and not only the chest, in the treatment of asthma. This point is stressed: the use of small doses—not more than 10 X filtered through 3 mm. of aluminum.

Indian Journal of Medical Research, Calcutta

13: 751-1034 (April) 1926

Blood Sugar in Indians. II. Normal Renal Threshold. U. N. Brahmachari.—p. 751.
Relative Susceptibility of Indian Milch Cattle to Tuberculosis. M. B. Soparkar.—p. 755.
Biologic Assay of Digitalis Preparations in Tropics. R. N. Chopra and P. De.—p. 781.
Cessation of Multiplication of B. Typhosus in Broth Culture. J. W. Cornwall and W. A. Beer.—p. 789.
Assessment of Infectivity of Rabies Fixed Virus by Means of Albino Rats. J. W. Cornwall and W. A. Beer.—p. 803.
Effect of Etherized Normal Brain Substance Injected Subcutaneously into Rabbits. J. W. Cornwall and W. A. Beer.—p. 807.
*Effects of Excessive Ingestion of Lime on Thyroid: Influence of Iodine in Counteracting Them. R. McCarrison.—p. 817.
Potency of Haffkine's Plague Prophylactic. B. P. B. Naidu, R. H. Malone and C. R. Avari.—p. 823.
Keeping Properties of Carbolized Antirabic Virus. T. H. Gloster, J. Taylor and K. N. Menton.—p. 835.
Development of Male and Female Hypopygium of Phlebotomus. S. R. Christophers and P. J. Barraud.—p. 853.
A. (Myzomyia) Pattoni, New Anopheles from Shan-Tung, North China. S. R. Christophers.—p. 871.
Effect of Heat on Rabies Vaccine. I. W. D. H. Stevenson, H. H. King, M. J. Nicholas and B. N. Lahiri.—p. 879.
Id. II. H. H. King, M. J. Nicholas and B. N. Lahiri.—p. 885.
*Malaria. IV. Sexual Forms of Plasmodium Falciparum in Peripheral Circulation. J. A. Sinton.—p. 895.
Duration of Protection After Prophylactic Inoculation of Vaccine Sterilized by Different Methods. K. R. K. Iyengar.—p. 917.
Feeding and Refeeding Sandflies (Phlebotomus Argentipes) for Second and Third Time. H. E. Shortt, P. J. Barraud and A. C. Craighead.—p. 923.
Breeding of Sandflies in Assam. H. E. Shortt, P. J. Barraud and C. S. Swaminath.—p. 943.

Life History and Morphology of Herpetomonas Donovani in Sandfly. H. E. Shortt, P. J. Barraud and A. C. Craighead.—p. 947.
Sandflies and Sandfly Fever in Peshawar District. T. C. M. Young, A. E. Richmond and G. R. Brendish.—p. 961.

Effects of Excessive Lime Feeding on Thyroid.—The effect on the thyroid gland of pigeons and rats of the excessive ingestion of lime, for a period of eight and a half months, was to cause in certain individuals an increase in size of the organ of approximately 50 per cent. McCarrison asserts that this increase was due to the abnormal accumulation of colloid material in the vesicles of the gland. There was no associated hyperplasia of the organ. The undue accumulation of colloid was preventable by increasing the intake of iodine proportionately to the excessive ingestion of lime. A balanced adjustment of lime and iodine in the diet would thus appear to be necessary for the normal storage and resorption of colloid material by the thyroid. This observation would appear to have a bearing on the pathogenesis of "colloid goiter" in man.

Development of Malaria Crescents.—The development of crescents, Sinton says, appears to be associated with a lowered immunity of the body, produced by the "toxins" of the disease, and it is tentatively suggested that a change in the reaction of the pulp of the bone marrow and spleen may be the immediate stimulus which acts on the asexual forms to cause the development of crescents from them. No marked correlation could be found between the degree of splenic enlargement and the occurrence of crescents in the peripheral blood. The duration of the life of a crescent may possibly be as long as from forty to fifty days in the peripheral blood, but the great majority of them disappear within three weeks after the asexual cycle has been destroyed. The number of crescent carriers found after the quinine and alkali treatment was less than after any of the other treatments tried. The reduction of crescent carriers by efficient treatment and the prevention of such carriers conveying the infection to mosquitoes are important factors in all antimalarial campaigns.

Indian Medical Gazette, Calcutta

61: 209-260 (May) 1926

Propagation of Hookworm Infections: Cockroaches. A. C. Chandler.—p. 209.
Variations in Potency of Digitalis Preparations in Tropics. II. R. N. Chopra and Premankur De.—p. 212.
Treatment of Syphilis by Benzobismuth. S. B. Surti.—p. 214.
External Medication in Leprosy. E. Muir.—p. 215.
Serologic Analysis of Bloodstains in Criminal Cases. R. B. Lloyd.—p. 219.
Blood Sugar After Insulin Treatment. L. Ghoshal.—p. 224.
Case of Meningocele Type of Spina Bifida. P. Savage.—p. 226.
Yaws in Chin Hills. D. D. Gulati.—p. 228.
Case of Fatal Poisoning by Nitrobenzene. D. R. Thomas.—p. 229.
*Syphilis of Liver Suggesting Liver Abscess. V. N. Mehta.—p. 230.
*Intravenous Iodine in Case of Abortion Complicated with Septicemia. B. J. Bouché.—p. 230.
Intravenous Quinine in Malignant Tertian Malaria. Y. S. Row.—p. 231.
Retention of Urine Due to Imperforate Hymen. M. Nasiruddin.—p. 232.
Case of Nasal Polypus. K. J. Shivdasani.—p. 232.
*Case of Abnormal Salivary Fistula. G. S. Chawla.—p. 233.
Foreign Body (Wooden Stick) in Abdomen. K. Narayanan.—p. 233.
*Case of Accidental Abdominal Injury. C. C. D. Gupta.—p. 234.
*Case of Death Due to Bismuth Injection. C. F. Chenoy.—p. 234.
*Pneumonia in Infant. C. C. D. Gupta.—p. 234.

Syphilitic Abscess of Liver.—The symptoms in Mehta's case suggested liver abscess but disappeared quietly under antisyphilitic treatment. Venereal infection was admitted by the patient.

Iodine Intravenously in Septic Abortion.—Antistreptococcus serum having failed to yield results in this case, Bouché resorted to intravenous injections of iodine. Eight minims of the aqueous solution (B. P.) was the first dose. The next day this was increased to 12 minims, and on the three succeeding days 16 minims was given daily. The patient made a complete and very rapid recovery.

Abnormal Salivary Fistula.—In Chawla's case a limpid fluid was discharged from behind the left ear whenever the patient took food. This condition had lasted for thirteen years. Examination disclosed a tiny fistula, with its orifice about half an inch behind the left ear. When the patient was asked to make the same movements with her jaw as if chewing food, no fluid escaped from the fistula; but the moment food was chewed, fluid commenced to run out of the fistula.

Abdominal Injury.—Gupta relates the case of a boy, aged 10, who came to him with a wound about 2 inches long below the umbilicus, from which some portion of the small intestine was protruding. While playing, he fell on a piece of broken glass and sustained the injury. The boy came to the hospital on foot supporting the coil of intestine in a piece of dirty cloth. The intestine was replaced and the wound closed. The wound healed by first intention and there was no complication.

Bismuth Injection Causes Death.—Two hours after receiving an intramuscular injection of a bismuth compound into the buttock, Chenoy's patient died with every evidence of bismuth poisoning. Chenoy says that the man's physician must have inadvertently injected the bismuth into a vein.

Pneumonia in Young Infant.—Gupta's patient was only 3 months of age. The special feature of the case lies in the fact that the temperature never rose above 98 F. The explanation given is that the thermogenic center was so overwhelmed by the toxins that there was no reactionary fever.

Indian Medical Record, Calcutta

46: 129-160 (May) 1926

Register of Patients. C. C. Murison.—p. 129.
Bacillary Dysentery. S. K. Mukherji.—p. 135.
Antibodies. Ashutosh Roy.—p. 145.

Irish Journal of Medical Science, Dublin

6: 249-296 (June) 1926

Ovulation, Menstruation and Related Phenomena in Mammals, Especially Women. J. B. Gatenby.—p. 255.
Postoperative Acidosis in Children. P. K. Dixon.—p. 267.
Irradiation Therapy. R. Stumpf.—p. 277.
Tumor of Spinal Cord. V. M. Synge.—p. 282.

Japanese Journal of Medical Sciences, Tokyo

1: 1-167 (Feb.) 1926

Tetania Parathyreopriva. S. Ogawa.—p. 1.
Water and Chlorine Exchange Between Tissues and Blood. M. Momose.—p. 31.
Influence of Toxic Substances on Nitrogenous and Purine Metabolism. I. Thyroid Substance. Y. Okura.—p. 49.
Id. II. Pyrogenous Substances. Y. Okura.—p. 65.
Influence of Yellow Phosphorus on Bone Regeneration and Endochondral Ossification Process at Epiphyseal Line. K. Otsuki.—p. 75.
Mechanism of Diuretin Hyperglycemia and Glycosuria in Rabbit. S. Mikami.—p. 121.
Antihemolytic Properties of Caffeine Group and Their Double Salts in Hemolytic System: Protective Action of These Preparations Against Anaphylaxis. U. Hirata.—p. 139.

Journal of Laryngology and Otology, Edinburgh

41: 349-420 (June) 1926

Saccus Endolymphaticus in Rabbit. W. J. M'Nally.—p. 349.
Peroral Endoscopy. I. Moore.—p. 361.
Zinc Ionization in Tympanic Sepsis. T. B. Jobson.—p. 383.

Journal of Mental Science, London

72: 171-316 (April) 1926

Affective States in Lilliputian Hallucinations. R. Leroy.—p. 179.
Lilliputian Hallucinations. M. C. Alexander.—p. 187.
*General Paralysis and Treatment by Malaria Fever. A. R. Grant and J. D. Sylveston.—p. 192.
Mental Factor in Miners' Nystagmus. H. W. Eddison.—p. 201.

Malaria Treatment of General Paralysis.—Malaria therapy is said by Grant and Sylveston to be the best method known of treating general paralysis, and it is a safe method if proper precautions are taken. One attack of malaria seems to confer a partial immunity to a second infection. Complete remissions occur in all clinical types of the disease, but are most common in the expansive type and in the demented type. In cases which do not go on to a complete remission life is prolonged, and marked physical and mental improvement may result. Malaria therapy does not seem to be so successful in women as in men. Among male general paralytics of the class admitted to mental hospitals in this country, we may reasonably expect a complete remission rate of from 20 to 30 per cent.

Journal of State Medicine, London

34: 311-372 (June) 1926

Hygiene and Sanitation in Constantinople During Allied Occupation. H. G. Hobson.—p. 311.
Occupational Deafness. D. Ranken.—p. 318.
Public Health and Obstetrics. Lady Barrett.—p. 323.
Prevention and Destruction of House Flies on Lines of Communication During Great War. E. B. Dewberry.—p. 326.
Industrial Fatigue: Effects on Human Activity in Industry. D. R. Wilson.—p. 343.
Social Conditions as Factor in Causation of Mental Disorders. M. R. Barkas.—p. 350.
Prevention of Venereal Diseases. C. N. Rolfe.—p. 356.

Journal of Tropical Medicine and Hygiene, London

29: 157-168 (June 1) 1926

Influence of Acid Reaction on Virus of Chicken Sarcoma (Rous). E. Harde.—p. 159.

Kenya Medical Journal, Nairobi, East Africa

3: 31-60 (May) 1926

Advances in Medical Helminthology. R. Daubney.—p. 33.
Hospitals for and Medical Training of Africans in Kenya. A. D. Williams.—p. 46.
Pure Milk Supply in Tropics. B. Spearman.—p. 51.
Three Cases of Liver Abscess. E. W. C. Jobson.—p. 55.
Foodstuffs of Luo Tribes. J. C. J. Callanan.—p. 58.

Lancet, London

1: 1129-1182 (June 12) 1926

Carbohydrate Metabolism in Health and Disease. H. MacLean.—p. 1129.
Present Position of Chloroform. A. Mills.—p. 1134.
Pathologic Action of Light on Eye. W. S. Duke-Elder.—p. 1137.
*After-Effects of Diphtheria on Heart. J. Hoskin.—p. 1141.
*Nature of Depressor Substance or Substances in Tissue Extracts. S. Vincent and F. R. Curtis.—p. 1142.

After-Effects of Diphtheria on Heart.—Sixteen cases of diphtheria in which there were no definite signs of heart involvement during their stay in hospital were studied by Hoskin after their discharge. All had tachycardia. Sinus arrhythmia was present in five cases and premature beats, arising in the auricles, in one case. In three cases there was definite enlargement, but in one of these cases, in which a mitral regurgitant murmur was present, there was a suspicious history of past rheumatic trouble. The heart sounds were altered in certain of the cases. In five cases the first apical sound was short, and in three it was reduplicated. In five cases the second pulmonary sound was accentuated, and a gallop rhythm was found in two. A systolic murmur was present in eleven cases, mostly over the mitral area, usually faint, but tending to be increased by exertion. One patient had developed paralysis of the right leg in the third week of the illness, and was still rather weak in that limb. Pallor was noted in two cases. In half the cases, heart symptoms were complained of or found at the examination. These were mainly shortness of breath on slight exertion, undue fatigue, and faint feelings on moving about quickly. In all cases except one, there was diminished cardiac reserve. This was more marked in cases with tachycardia. Hoskin believes that the effect of the diphtheritic toxin on the heart, in those cases in which it has become involved during the course of the disease, is a more lasting one than is generally recognized. It is therefore of the utmost importance that patients, in whom cardiac symptoms and abnormalities have been discovered during their stay in hospital, shall be examined thoroughly, both clinically and electrocardiographically, on their discharge before being allowed to return to their ordinary avocations, and that if the heart is found still affected they should be kept under observation until it has either regained the normal or has reached a stationary condition of recovery.

Depressor Substance in Tissue Extracts.—Vincent and Curtis state that they have abundant evidence that, although choline and histamine may be present in tissue extracts, and may be partly responsible for their physiologic activity, there must also be present some other substance that differs fundamentally in its pharmacodynamic action, and presumably, therefore, in its chemical nature, from either of these substances. There is some evidence that choline plays a larger part in the actions of nervous tissue extracts than in those of extracts of other organs and tissues, though even in the former it is clear that a large part of the effect is due to some substance which is neither histamine nor choline.

Medical Journal of Australia, Sydney

1: 539-568 (May 15) 1926

Gonorrhea: Sequelae in Male. V. N. B. Willis.—p. 539.
Albuminuric Retinitis of Pregnancy. J. C. Douglas and W. R. Griffiths. —p. 545.
Artificial Pneumothorax. W. S. Newton.—p. 547.
Common Disorders of Skin. K. Colquhoun.—p. 549.
Pancreatic Cyst. F. B. Crawford.—p. 552.
*Lymphosarcoma of Small Intestine. F. B. Crawford.—p. 553.
Lethargic Encephalitis. W. R. Griffiths.—p. 553.

Lymphosarcoma of Small Intestine.—Crawford's patient was 8 years of age. He complained of pain in the lower part of the abdomen. There was no other subjective symptom. The only objective symptom was a palpable rounded mass in the middle line of the abdomen just above the pubes. At operation a freely movable tumor was found intimately connected with a loop of small intestine. Resection of the bowel wide of the growth was performed and an end to end anastomosis done. The tumor proved to be a lymphosarcoma.

Medical Journal of South Africa, Johannesburg

21: 233-264 (April) 1926

Treatment of Industrial Surgical Accidents. F. P. Fouche.—p. 234.
Surgery of Gallbladder. R. Daly.—p. 247.

South African Medical Record, Cape Town

24: 217-240 (May 22) 1926

Dental Radiology. J. v. Rooijen.—p. 218.
Neuro-Otology. J. C. G. Macnab.—p. 222.
Besredka's Theory of Immunity: Review. J. J. Boyd.—p. 230.
Case of Double Fracture of Ischium. W. Gilbert.—p. 232.

Tubercle, London

7: 369-416 (May) 1926

Catarrho-Pyogenic Infections and Tuberculosis of Lung. H. Rolleston. —p. 369.
Id. R. H. B. Shaw.—p. 372.
*Significance of Variations in Clinical Type in Pulmonary Tuberculosis. S. L. Cummins.—p. 375.
*Deltoid Flattening in Early Phthisis. A. Delmege.—p. 388.

Classification of Pulmonary Tuberculosis.—In classifying the clinical varieties of pulmonary tuberculosis, Cummins says, it is not sufficient to indicate the anatomic extent of the disease and the constitutional state of the patient. It is necessary to take into consideration, also, the previous history of the patient, as to whether the present attack is of the "acute initial" or the "chronic or recrudescent" type. There is reason to think that, in the acute initial types, the exposure to infection may have been so massive in extent or repeated at such frequent intervals that there has been no time for the body to elaborate and extend its defensive mechanism to a degree adequate for the emergency. In such cases the prognosis is grave. In the chronic or recrudescent types, however, the time factor and the quantity factor of infection have been more in the patient's favor with the result that a relatively considerable measure of resistance is often acquired and the prognosis is, in such cases, better. In prognosis, in treatment and, above all, in attempts to evaluate the results of different kinds of treatment, a system of classification on which the "acute primary" or "initial" cases are differentiated from the "chronic or recrudescent" is of great importance.

Deltoid Flattening Early Sign of Phthisis.—Delmege first called attention to this sign in 1921. He then termed it "subacromial flattening." It is a trophic sign often found in early phthisis. He now proposes the name "deltoid flattening." That the condition is a definite clinical entity is evidenced by the fact of its not infrequent occurrence as the only trophic sign in many early cases of pulmonary tuberculosis, and, on the other hand, by its absence in a certain number of advanced cases showing other well marked trophic changes. It appears as a flattening in the region over the anterior aspect of the head of the humerus, so that, to a lateral view, this surface lies in a plane posterior to the corresponding one on the normal side, the slight groove which runs from the acromioclavicular joint to the anterior axillary region being also shallowed.

Annales des Maladies Vénériennes, Paris

21: 241-320 (April) 1926

*Juxta-Articular Nodules in a Syphilitic. B. Sparacio.—p. 241.
Fight Against Venereal Disease at Petrograd. Ikhtemann.—p. 251.

21: 321-400 (May) 1926

"Conceptional Syphilis." Carle.—p. 321.
The History of Individual Protection Against Syphilis. G. Morin.—p. 327.
Hock's "Treatise on French Disease": 1514. Barthélemy.—p. 362.

Juxta-Articular Nodules in a Syphilitic.—Sparacio treated a patient, aged 30, with symmetric nodules close to the elbow joints. The nodules were hard, round, the size of a pea, situated three or four in a group. The adjacent skin and glands were normal. The nodules did not cause any discomfort. The Wassermann test was positive. No changes in the joints were revealed by roentgen rays. On microscopic examination, a nodule proved to be a gumma. Several analogous cases are cited. Antisyphilitic treatment is effective in the early stage of the nodules, but without benefit when the stage of fibrous degeneration has been reached.

Bulletin de l'Académie de Médecine, Paris

95: 557-588 (June 8) 1926

*Gangrenous Abscess in the Lung. E. Sergent and F. Bordet.—p. 563.

Gangrenous Abscess of Lung from Infection of the Mouth or Nose.—Sergent and Bordet report observations of spirochetal bronchopneumonia with recurring gangrene of the right lung. It occurred from three to twenty-one days after surgical intervention, under general anesthesia. In two patients, the operation was on the nose or throat; in one, for uterine fibroma. Infection of the incision could not be incriminated. The pulmonary gangrene seems to have been induced in all by nasopharyngeal mucus, swallowed during the anesthesia. A bronchial embolus may be the origin of many postoperative complications on the part of the lungs, hitherto mistakenly ascribed to venous embolism from the wound. They reiterate that rigorous disinfection of the mouth and nose should precede every operation under general anesthesia.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 847-914 (May 28) 1926

*Treatment of Vomiting. A. Lemierre and P. N. Deschamps.—p. 848.
Ptosis of Tongue and Vagotonia. Laignel-Lavastine et al.—p. 854.
Pigmentation of Urine in Spirochetal Jaundice. Pagniez.—p. 858.
*Corpus Callosum Tumors. G. Guillain and R. Garcin.—p. 859.
Malta Fever Meningitis. Desage et al.—p. 872.
Diagnosis of Interlobar Pleurisy. Armand-Delille and Vibert.—p. 879.
Action of Adonidine by the Vein. Harvier and Schedrovitsky.—p. 884.
Abscess of Liver Cured with Emetine. P. A. Petridis.—p. 891.
Edema of Lung with Mitral Stenosis. Dargein and Doré.—p. 894.
Pneumonia of the Elderly. M. Renaud and Briault.—p. 897.
Multiple Manifestations of Congenital Syphilis in Woman, Aged 44. J. Rouillard and J. Calmels.—p. 900.
Negative Tests in Secondary Syphilis. Sézary and Lichtwitz.—p. 906.
Action of Intravenous Injections of Air on the Heart. L. Binet and E. Donzelot.—p. 911.

Arrest by Suggestion of Incoercible Vomiting with Exophthalmic Goiter.—Lemierre and Deschamps describe a case of exophthalmic goiter, complicated by incoercible vomiting and grave cachexia, in a girl, aged 16. The patient was excessively irritable, and prone to anger. The hospital physician happened to tell of another girl with obstinate vomiting who had recovered as soon as she was given Camembert cheese to eat. The patient asked for this cheese. She ate it, and then other food, without further vomiting, and the tachycardia, goiter and exophthalmos improved, until there was scarcely a trace of them in a few months. The weight increased threefold and she was later engaged in a fatiguing occupation. The unintentional psychotherapy came at the right moment to influence the disturbed balance of the vegetative system. The arrest of the vomiting was the key to the recovery.

Clinical Picture of Tumor of Corpus Callosum.—The essential features in Guillain and Garcin's patient, aged 55, were ataxia and mental disturbances characterized by emotional indifference, torpor and drowsiness. These phenomena as well as exaggerated tendon reflexes in the legs, foot clonus, bilateral Babinski sign and tremor of the fingers suggested the diagnosis of a tumor in the corpus callosum. At necropsy, a glioma was found in the anterior segment. Lesions of the association fibers of this great commissure controlling the bilateral coordination of movements, readily explain the ataxia.

Comptes Rendus de la Société de Biologie, Paris

94: 957-1048 (April 23) 1926. Partial Index

*Reactions to Tuberculin and Proteins. F. de Potter.—p. 961.
*Reducing Property of Cancer Serum. C. Mondain et al.—p. 963.
Bordet and Ciuca's Microbic Variability Theory of Transmissible Autolysis. F. d'Herelle.—p. 973. Reply. J. Bordet.—p. 975.
*Surface Tension of Serum in Cancer. K. Svehla.—p. 980.
*"Primary" Hydatid Cyst of the Pelvis. F. Dévé.—p. 983.
*Inactivation of Epinephrine. J. E. Abelous and R. Delas.—p. 999.
*Nicotine and Epinephrine Secretion. A. Tournade and M. Chabrol.—p. 1002.
*Filtrable Forms of Streptococci. S. Ramsine.—p. 1010.
*Measuring Surface of Brain Cortex. Leboucq.—p. 1017.
Action of Vagus on Intra-Auricular Conduction. P. Rylant.—p. 1032.
The Sugar of the Erythrocytes. L. Brull and P. Spehl.—p. 1039.
Rôle of Hemolytic Streptococcus in Asthma. A. Haibe.—p. 1042.

Reactions to Tuberculin and Nonspecific Substances in the Tuberculous.—Tuberculous patients were injected simultaneously with tuberculin and various nonspecific protein substances. The reactions were similar. De Potter concludes that it is not the active element of tuberculin alone which entails the local reaction.

Reducing Power of Cancer Serum.—Mondain, Douris and Beck repeated Thomas and Binetti's methylene blue test for serodiagnosis of cancer. They assert that it is not the cancer serum which reduces the methylene blue, but the cancer extract. Decoloration of the dye occurs with the cancer extract alone. The microbes contained in the extract, or their secretions, seem to be the reducing factors.

Surface Tension of Blood Serum and Its Calcium Content in Cancer.—Svehla found that the decrease of surface tension of the blood serum parallels the reduction of its calcium content, in patients with cancer.

No Primary Echinococcosis in the Pelvis.—Dévé sustains the theory that hydatid cysts of the pelvis are always secondary. He refers to a case in a girl, aged 9. At the operation, no other cysts were found except the one in the pelvis. The cyst was diagnosed as primary, probably developed from the posterior wall of the uterus. At necropsy, a deep scar was found in the liver parenchyma. The girl had had a severe fall a few months before. The traumatism of the liver may have dislodged the mother vesicle so that it dropped into the pelvis.

Inactivation of Secreted Epinephrine by the Formaldehyde of the Blood.—Abelous and Delas found a slight amount of formaldehyde in the blood of dogs, rabbits and certain other animals. The proportion was considerably larger in the venous blood than in the arterial. Formaldehyde was also detected in human urine. The formaldehyde in the inferior vena cava may inactivate the epinephrine normally secreted by the suprarenals. The inactivated epinephrine is apparently eliminated by the urine. This may explain why there is no epinephrine in the vena cava, although continuously secreted by the suprarenals.

The Share of Nicotine in Phenomena from Hyperepinephrinemia.—Tournade and Chabrol's experiments on dogs seemed to demonstrate that certain phenomena ascribed to the direct action of nicotine, such as atheroma or nicotine-chloroform syncope, are in reality caused by an increased secretion of epinephrine, due to the nicotine.

Filtrable Forms of Streptococci; Vaccination with Dick Toxin.—Ramsine's research was made with streptococcus toxin prepared by the Dick method. There was evidence of filtrable forms of the cocci, passing through the filter in the form of invisible granules. These filtrable forms are highly resistant, and may develop into the typical forms. They are virulent, and seem to immunize against the pathogenic streptococci. About 700 children were given three injections of the streptococcus toxin. Scarlet fever developed among them in about 2 per cent. In several subjects a positive Dick test became negative in the course of the vaccination.

Measuring Surface Area of the Brain.—Leboucq coats the cortex with copper by a kind of silver-plating technic. From the amount deposited on a given area he deduces the area of the whole.

Paris Médical

59: 557-572 (June 12) 1926

Hyperglycemia Without Glycosuria. F. Rathery and Froment.—p. 557.
Vaccination Against Typhoid. A. Lumière.—p. 562.
*Purpura of Anaphylactic Origin. R. Debré et al.—p. 566.
Apparatus for Fracture of the Humerus. G. Pascalis.—p. 569.

Case of Probable Digestive Anaphylaxis Simulating Rheumatoid Purpura.—The history of Debré, Lamy and Baudry's patient, aged 9, is as follows: Pains developed suddenly in the limb joints, with edema, soon followed by a dysenteriform colitis. A purpura syndrome appeared by the seventh day of the disease, accompanied with urticaria-like patches, vasomotor disturbances, and notable enlargement of glands. All the symptoms disappeared in about five days. They are inclined to consider this case as an anaphylactic purpura of digestive origin, although the responsible factor could not be established. Paralysis of the capillary endothelium, irritation of smooth fibers, hyperproduction of lymph, and its incoagulability, explaining the phenomena observed, might be induced by protein compounds in a sensitized subject.

Presse Médicale, Paris

34: 721-736 (June 9) 1926

Insufficiency of the Heart. C. Lian.—p. 721.
*Muscular Work and the Respiratory Metabolism. M. Boigey.—p. 724.
*Dressings with Horse Serum. G. A. Weill.—p. 733.

Respiratory Metabolism During Physical Training.—Boigey used the graphic method for recording changes of respiratory metabolism during physical training. The amount of carbon dioxide eliminated seemed to be smaller, the more intensive the exercise. In other words, those who work with more enthusiasm, utilize better the oxygen absorbed; the work is done more economically. Exercise started with too much haste, entails considerable elimination of carbon dioxide, for a few seconds to three or four minutes. Breathlessness in runners does not depend on the respiratory metabolism. It is connected with irritation of the respiratory centers by carbon dioxide as well as by other products of intensive muscular work, especially lactic acid.

Horse Serum as Dressing for Wounds.—Weill extols the use of horse serum in wounds of the face, hands or fingers. As it dries, it forms a protecting varnish. Gauze or cotton, soaked in the serum, is applied to the wound. When nearly dry, in five minutes (or less if a current of hot air is applied), the wound may be dusted with boric acid. The serum film does not retract. like collodion, and it clings closer, while it can be easily rinsed off.

34: 737-752 (June 12) 1926

*Low Epidemic Encephalitis. R. Cruchet and H. Verger.—p. 737.
Calcified Subacromial Bursa. L. Lamy and P. Pérès.—p. 739.
*Fat-Soluble Vitamins and Exohormones. R. Clément.—p. 740.

Low Forms of Epidemic Encephalomyelitis.—Cruchet and Verger have encountered twenty-eight cases in which the epidemic disease was almost exclusively restricted to the spinal cord; in six others, to the roots, and in five, there was polyneuritis. They explain them as low forms of epidemic encephalitis, on account of the epidemic prevalence of this disease at the time, and the appearance of certain symptoms pathognomonic of the disease, as well as the peculiar grouping and capricious course of the nervous disturbances, unlike anything observed in ordinary nervous affections. The prognosis is always uncertain: complete recovery in some cases, sequelae or death in others.

The Reproduction-Promoting Vitamin E and the Exohormones in General.—Clément discusses the fat-soluble vitamins. They are resistant to alkalis, heat and desiccation, and are soluble in fats. They contain an element—vitamin E—which apparently influences reproduction in animals. A diet lacking in this substance E induced disturbances of ovulation and even sterility in rats. Vitamin E is found mostly in vegetable oils, lettuce, meat and oats; also in extracts of grains, wheat, hemp, cotton-seed oil and in maize. It is lacking in milk, proteins, amino-acids and cod liver oil, as well as in cocoa, linseed and sesame oils. Sterility from lack of vitamin E is not accompanied by any apparent lesions of the ovaries; its pathogenesis is still unknown. There seems to be an analogy between vitamins and endocrine secretions. Both seem to influence the nutrition of tissues as well as the metabolism of cells and humors; and both may also stimulate endocrine secretion. They may be regarded as exogenous hormones, or exohormones, in contrast to the endocrine endogenous hormones. The theory is suggested that the vitamins may induce certain atomic changes, as an explanation of their action.

Revue Franç. de Gynécologie et d'Obstét., Paris

21: 145-224 (March) 1926

Corpus Luteum and Vesicular Mole. P. Gaifami.—p. 145.
Obstetrical Anesthesia. J. L. Wodon and A. Poulain.—p. 159.
Oscillometry in the New-Born. P. Balard.—p. 166.
Two-Stage Operation for Pyosalpingitis. Duchet-Suchaux.—p. 181.

21: 225-284 (April) 1926

Relations Between Colon Bacillus Infection and Helminthiasis in Women. V Le Lorier.—p. 225.
Treatment of Chronic Salpingo-Oophoritis. A. Laurentie.—p. 230.
*Blood Grouping in Obstetric Practice. P. Falgairolle.—p. 236.

Identification of Blood Groups in Obstetric Practice.—Falgairolle specifies two sources of error in examining blood for incompatibility: The erythrocytes and the serum may not be capable of iso-agglutination. It frequently happens that the iso-agglutinogens (red corpuscles) and especially the iso-agglutinins (serum) characterizing the blood group, are not yet developed in the new-born. In Astrowe's case, transfusion of the maternal blood did not produce any by-effects in the infant, aged 12 months, but, repeated a month later, it was followed by a grave shock. The other source of error lies in false iso-agglutinations. The false agglutination is merely the aspect presented by abnormally rapid sedimentation of erythrocytes. This is common in women, and is still more pronounced during pregnancy. On the other hand, the sedimentation speed of the infant's erythrocytes is not accelerated. He utilizes a method which, he says, averts both errors. A standard serum of high agglutinating power is used with kaolin for this purpose. The standard serum serves to reveal the group of the tested blood, and the kaolin to eliminate false iso-agglutinations. Three parts of the standard serum are mixed with one part of a kaolin suspension (1:3) and one part of the blood. The kaolin test requires only ten to fifteen minutes at the bedside. Forty blood transfusions have been applied with this technic, without any accident.

Schweizerische medizinische Wochenschrift, Basel

56: 513-536 (May 29) 1926

H. Sahli's Seventieth Birthday. Lichtheim.—p. 513.
Mycotic Sepsis. E. Ziegler.—p. 514.
Serous Meningitis from Influenza. Burckhardt and Kollarits.—p. 517.
"Nutrition Problems." J. Abelin and J. Waldsburger.—p. 518.
*Mortality Statistics. A. Gigon and F. Kinzler.—p. 519.

Mortality Statistics, Especially of Tuberculosis.—Gigon and Kinzler publish extensive mortality statistics and charts dealing especially with Switzerland. Details as to the mortality in different age groups are especially instructive. The general decrease in the death rate is evident only up to the age of 65. Tuberculosis could be successfully combated by founding homes and working places for the infectious patients, and by better hygiene of the dwellings.

56: 537-560 (June 5) 1926

*The Sympathetic and the Striated Muscles. L. Asher.—p. 537.
*Action of Thyroid Substances. J. Abelin.—p. 538.
*Influence of Diseased Kidney on Healthy Mate. H. Walthard.—p. 539.
Endometroid Proliferations. W. Neuweiler.—p. 545.
Volume Bolometry in Influenza and Encephalitis. D. J. da Cunha and I. V. Lazarraga.—p. 548.
*Agranulocytosis. W. Feer.—p. 551.

The Sympathetic and the Striated Muscles.—Asher is inclined to deny a sympathetic innervation of the muscles.

At least, no indications of it were found in carefully conducted experiments so far. Nevertheless, he declares that further research is necessary since it is improbable that the anatomically established presence of sympathetic fibers should have no demonstrable significance.

Action of Thyroid Substances.—Abelin found that the increase of the basal metabolism as well as of the specific dynamic action due to administration of thyroid tissue to rats may be inhibited by fat. The glycogen fixation in the liver of such animals remains almost normal if fat is added to the food. He believes that fat counteracts the injurious effect of thyroid on the metabolism, especially of carbohydrates.

Influence of Diseased Kidney on Healthy Mate.—Walthard investigated the elimination of indigocarmin and the presence of albumin as well as of casts in the urine after various injuries to one kidney. He believes that the other kidney suffers from the action of the products of decomposition. He also obtained the impression that decomposition of a kidney has a stronger influence on the remaining kidney than resorption of a testis.

Agranulocytosis.—Feer noted leukocyte counts below 3,000 in 186 of 29,498 patients (0.63 per cent). Among them were thirteen patients with counts below 1,000. The latter died shortly afterward, with the exception of one woman with Banti's disease. He believes that agranulocytic angina is only one type of sepsis.

Policlinico, Rome

33: 757-787 (May 31) 1926

Treatment of Glaucoma. C. Ascher.—p. 757.
Sarcoma of Vascular Sheath. F. Speciale.—p. 761.
*Influenza Epidemic. R. Gaeta.—p. 763.
"Hemophilia." R. Montelcone.—p. 764.
Alcoholism and Literature. A. Pazzini.—p. 765.

Influenza Epidemic.—Gaeta observed several cases of bronchitis localized at the apex in convalescents from influenza in the recent benign epidemic. The other symptoms were a pale complexion, slight tachycardia and trigeminal neuralgia. The patients recovered within a short time.

33: 789-822 (June 7) 1926

Defense Reflexes. A. Valentini.—p. 789.
*Amebiasis and Endocarditis. C. B. Farmachidis.—p. 794.
"Cholesterol in Urine." L. Condorelli.—p. 796.
*Dorsal Percussion of the Aorta. G. Fabj.—p. 798.

Amebiasis and Endocarditis.—Farmachidis adds to his two previous cases two new instances of endocarditis occurring during amebic dysentery.

Dorsal Percussion of the Aorta.—Fabj confirmed roentgenologically the semilunar dulness he described in the paravertebral line at the height of the third rib, in cases of dilatation of the aorta.

Riforma Medica, Naples

42: 457-480 (May 17) 1926

Meinicke Test. G. Spicca.—p. 457.
*The Cerebellum in Malaria. A. Puca.—p. 461.

The Cerebellum in Malaria.—Puca observed a cerebellar syndrome and a psychosis due to malaria. The young man recovered under quinine and arsphenamine.

42: 481-504 (May 24) 1926

The Neapolitan School. L. D'Amato.—p. 481.
*Atony of the Esophagus. P. Russi.—p. 487.
*Epinephrine in Chloroform Syncope. C. F. Bianchetti.—p. 498.

Atony of the Esophagus.—Russi reports a case of paralysis and another of atony of the esophagus. As a rule, deglutition of soft foods is more difficult in such patients than the swallowing of either fluids or solids. This differentiates them from cases of stenosis of the esophagus, although roentgen study is necessary. Lesion of the vagus by tuberculous lymph nodes was the probable cause in his first case. The other was a neuropathic woman, aged 59.

Epinephrine in Chloroform Syncope.—Bianchetti's patient, a man with metastases of carcinoma, stopped breathing after inhalation of a few cubic centimeters of chloroform. The heart beat stopped shortly afterward. Artificial respiration and subcutaneous injections were of no avail. He injected 1 cc. of a 0.1 per cent solution of epinephrine into the heart and while maintaining the artificial respiration, he gave twenty-five minutes later another injection of 1.5 cc. of the epinephrine, and 1 cc. of a 25 per cent solution of caffeine. The patient still did not react. They kept on with the respiration. A third injection of 2 cc. of the epinephrine, given thirty-five minutes after the onset of the syncope, resuscitated the patient. Yet he did not regain consciousness, and died in a few hours.

Rivista di Clinica Pediatrica, Florence

24: 361-432 (June) 1926

*Oncolytic Power of Serum. G. Bentivoglio.—p. 361.
Myopathies in Children. U. Rubbi.—p. 387.

Oncolytic Power of Serum.—Bentivoglio made the Freund-Kaminer test with refractometric reading with the serum from children. He confirms the pronounced lysis of cancer cells in health and in various diseases. The lytic power was low in cachexia, and in acute or subacute nephritis. It was practically absent with malignant neoplasms and in congenital idiocy.

Anales de la Facultad de Medicina, Montevideo

10: 817-884 (Oct.) 1925

Local Anesthesia. E. Pouey.—p. 817.
*Preoperative Immunization. E. Blanco Acevedo.—p. 842.
Retrodisplacement of the Gallbladder. A. Lamas.—p. 852.
*Neurotrophism with Experimental Traumatism. Stajano.—p. 858.
Some Thoraco-Abdominal Bullet Wounds. D. Prat.—p. 869.

Preoperative Vaccination. — Blanco Acevedo prepares patients for an operation by injecting subcutaneously from 2 to 4 cc. of a polyvalent vaccine made with 35, 80 and 15 hundred millions of staphylococci, the pyocyaneus and streptococci respectively. He gives three injections at three day intervals and waits to operate until three days have elapsed since the last injection. This has been his routine procedure for four years, and he says that it insures an aseptic course in operations on bones, and that it allows suture at once without drainage in hysterectomy for cancer, the results at least as good as Faure reports with the Mikulicz. It insures a smooth recovery from practically all operations, free from the grave and minor mishaps of infection, if the technic has been faultless. He also practices this preoperative immunization as a preliminary to radium therapy. He adds that in his last five gynecology courses, the students have not had an opportunity to see any cases of sepsis or embolism, phlebitis or suppuration in the wall as the women have all made such smooth recoveries. The experience has been the same in the army hospital—a total of 400 operations. He remarks that he was the pioneer in this preoperative immunization.

Neurotrophic Action with Experimental Chronic Traumatism.—Stajano has noted that when cancer has been experimentally produced by painting with tar, the latter acts not only at the point where it is applied but its action is evident also at certain distant points, these points being so situated as to imply the intervention of a nerve element. While the tar was always applied to the inside of the ear of the rabbit, the resulting tumors developed not only on the inside but also on the outside of the ear, and always at the same point. At this point there is first a falling out of hairs, then eczema, and then a papillomatous growth. The other ear displays a slight reaction along the same lines and with the same topographical arrangement.

10: 885-948 (Nov.) 1925

The Basal Metabolism with Pathologic Thyroid. E. Claveaux.—p. 885.
*Intraspinal Anesthesia. J. M. Silva.—p. 909.
Two Cases of Large Aneurysm of the Aorta. Grezzi and Buquet.—p. 931.

Intraspinal Anesthesia.—The first intraspinal anesthesia at Montevideo was by Navarro in 1899. In the last ten years this technic has been applied in an average of 300 cases a year, without a single death or serious tardy mishap. In a report presented to the Surgical Society at Paris, ten deaths were mentioned in a total of 20,267 intraspinal anesthesias.

"Analysis of these deaths exculpates the method." The "twenty minute accidents"—pallor, vomiting and small pulse during the first fifteen to twenty minutes—are slight and transient. The best way to combat them is by lowering the patient's head. The great advantages of this method are that there is no shock, and that very little of the anesthetic is required, and it does not affect the liver, heart, lungs or kidneys. It does not modify azotemia or acidosis. Although headache is common, the discomfort from this is not to be compared with that from the vomiting after general anesthesia, and the headache yields readily to antipyrin. Silva adds that pure procaine is used at Navarro's clinic, without epinephrine or local anesthetic; caffeine is relied on in emergencies but is not used regularly. The only two instances of accidents were in cancer patients with intense jaundice.

Archivos Esp. de Enf. del Aparato Digestivo, Madrid

9: 193-256 (April) 1926

Sodium Bromide in Stomach Disturbance. Fernández Martinez.—p. 193.
*Balantidium Dysentery in Spain. Devesa.—p. 228.
Acute Perforation of the Stomach. A. Urquijo.—p. 235.

Balantidium Dysentery in Spain.—Devesa remarks that although balantidium dysentery has been known in Europe since Malmsten discovered it at Stockholm in 1857, it is very rare. No instances of it have been published in England and only five in France. He reports two cases, the first to be discovered in Spain. Both were cured by emetine and neoarsphenamine. Enemas of bismuth aided in the local healing.

Archivos Españoles de Pediatría, Madrid

10: 65-128 (Feb.) 1926

Surgery in Spastic Infantile Paralysis. M. Bastos Ansart.—p. 65. C'cn.
*Bronchopneumonic False Croup. Julio Laguna.—p. 92.
Child Psychology: Normal and Pathologic. Cesar Juarros.—p. 103.

Bronchopneumonic False Croup.—Laguna describes seven cases out of a series of eight under observation in a recent two months in which children, aged 4 months to 6 years, after attacks of bronchitis, bronchial pneumonia or tracheobronchitis, developed croup suddenly and so severely that intubation was required. No diphtheria bacilli could be discovered, and the aspect of the throat also excluded diphtheria. The one child treated by tracheotomy died, as also one of the four intubated; the others recovered. Croup of this type has been encountered with measles, scarlet fever, influenza and chickenpox. As the nervous and spastic elements predominate, treatment should be with sedatives and prompt intervention to prevent fatal suffocation.

Archivos Latino-Amer. de Pediatría, Buenos Aires

20: 79-144 (Feb.) 1926

*Diagnostic Study of Birth Paralyses. A. M. Marque.—p. 79.
Diagnosis of Congenital Syphilis in Older Children. E. Beretervide.—p. 92.
*Tracheobronchial Glandular Disease. V. Escardó y Anaya.—p. 102.
Generalized Tuberculosis with Slow Course in Infants. Walter Piaggio Garzón.—p. 114.

Birth Paralysis.—Marque has found true paralysis without bone lesions only in 5 per cent of his 118 cases of birth paralysis since 1917. The false birth paralyses from detachment of the epiphysis or hemorrhage around it or from injury in or around joints were encountered in 85 per cent of the total, and the combination of true and false paralysis occurred in 10 per cent. Sixteen roentgenograms show the lesions responsible for the symptoms. They grow worse as the child develops. The differential diagnosis is based on the clinical course and roentgen-ray examination; after the child is 4 months old, electric tests may prove instructive. The history of the delivery is important in classifying the case. Radiography will reveal whether the center of ossification is in its normal place—this can be determined as early as the second to the fourth week.

Roentgen-Ray Treatment of Tracheobronchial Glands.—Escardó extols the prompt action of exposure to the roentgen rays when young children present a spasmodic cough, rebellious to the usual measures, with slight symptoms otherwise except the asthma-like condition. The roentgen rays confirm the suspicion of enlarged tracheobronchial glands, and exposure of the hilum region to a dose of 5 H. units with a 1 mm. aluminum filter induced great improvement in three cases described, with subsidence of the adenopathy in some of these and other cases.

Boletin de la Soc. de Obstet. y Ginec., Buenos Aires

5: 5-23 (April 8) 1926

Embryotomy with Living Fetus. J. B. González.—p. 5.
*Succession of Cancers with Long Interval. J. A. Gabastou.—p. 14.

Two Primary Malignant Tumors.—Gabastou relates that not a trace of a cystadenoma of the ovary that had been extirpated three years before was found at the operation for extirpation of an epithelioma of the uterus in the case described, in a woman aged 44. She seems to be in perfect health since this second removal of an apparently primary cancer. Iribarne described a similar case. His patient had been cured by radium treatment of an inoperable cancer of the cervix of the uterus. Six years later she developed malignant bowel disease. It did not seem to have any connection with the primary genital tumor.

Brazil-Medico, Rio de Janeiro

1: 43-52 (Jan. 23) 1926

*Syphilis in Gynecologic Clinic at Rio. Nelson Barbosa.—p. 43.
*Partial Tetanus. Sá Earp, Jr.—p. 46.
Addendum to "Study of the Verumontanum." A. Valerio.—p. 47.

Syphilis in Gynecologic Clinic at Rio de Janeiro.—Barbosa has had the Wassermann test applied to every woman entering the clinic during the last seven years. A positive reaction was obtained in 37.9 per cent in 1921, but the proportion has dropped since to 25.2 per cent.

Partial Tetanus.—The boy, aged 12, had developed intense contracture of the right leg, with tonic contractions and lancinating pains, in the two weeks that followed trauma of the leg below the knee. There had also been transient dysphagia. Tetanus antiserum had been given at the time of the wound, and its resumption, with local treatment of the suppurating wound, and bromides, gradually conquered the partial tetanus.

1: 171-184 (March 27) 1926

*Cephaloplegic Form of Encephalitis. J. Bonaba and F. Ygartua.—p. 171.
Frambesia in Parahyba. E. de Almeida and O. de Oliveira.—p. 172.

Cephaloplegic Form of Epidemic Poliomyelitis.—Bonaba and Ygartua report a new case of the cephaloplegia described by Fernandes Figueira in young children. The child aged 3 presented otherwise symptoms of an abortive form of acute poliomyelitis. There was no paralysis, merely an inability to hold the head up; it contrasted peculiarly with the coexisting nuchal rigidity. Lumbar puncture revealed an intense cytologic reaction with polymorphonucleosis. The child soon recovered completely, and is now apparently normal except for slight weakness and loss of the knee-jerk.

1: 185-200 (April 3) 1926

*Treatment of Epidemic Encephalitis. Enjolras Vampré and F. Cintra do Prado.—p. 185.

Treatment of Epidemic Encephalitis.—Vampré and Cintra do Prado advise to keep the patient in bed, the diagnosis once settled, and allow only milk or a *milk-vegetable* diet. The nasopharynx should be disinfected, and sodium salicylate may be found useful; it has proved successful beyond all anticipations in some cases. The same applies also to methenamine. Among the valuable adjuvants are stimulants, tonics, sedatives and baths, but to date little has been accomplished in treatment of the disease as a rule, although rare instances of complete recovery justify persevering treatment.

Gaceta Médica de Caracas

33: 1-16 (Jan. 15) 1926

Visit to Bad Nauheim. J. R. Risquez.—p. 1.
Medical Geography of State of Bolivar. Briceño Rossi.—p. 3. C'tn.
*Syphilis Masquerading as Typhoid. L. F. Blanco.—p. 13.

Syphilitic Pseudotyphoid.—Blanco relates that the clinical picture was that of typhoid, with morning remissions, but as baths did not seem to have any effect, and as the Wassermann reaction was positive; treatment for syphilis was applied without further delay, with prompt benefit. In another case syphilis of a peculiarly contagious type masqueraded as typhoid fever for a time. In tropical climates, typhoid may simulate almost any other disease, including the chills of malaria, hemorrhagic nephritis, catarrhal cholecystitis, and torticollis.

Gaceta Médica de México, Mexico City

57: 1-130 (Feb.) *1926*

Experiences with Uterine Cancers. J. Villarreal.—p. 1.
*Treatment of Vaginal Discharges. E. Ramírez.—p. 26.
Pithiatism and Hysteria. E. O. Aragón.—p. 29.
Therapeutic Proceedings. F. Bulman.—p. 36.
Actinomycosis. I. Prieto.—p. 44.
Critical Study of the Teaching of Medicine in Mexico. E. Pous Chazaro.—p. 58. Idem. S. González H.—p. 67.

Bacteriologic Examination of Vaginal Discharge.—Ramírez emphasizes the necessity for ascertaining the actual flora of the vagina with pathologic discharge. He cites instances of the harm done by treatment on the basis of assumed gonococcal infection when the pneumococcus or other germ was involved. He remarks that if the mouth were treated with such potent washes as are currently used in the vagina, the injury therefrom might be better appreciated. Routine microscopic examination might save many women from chronic irritative processes from injudicious treatment.

Lisboa Médica, Lisbon

2: 495-550 (Nov.) 1925

*Gastrectomies at Lisbon. Custódio Cabeça.—p. 495.
Medical Education at Lisbon. A. Celestino da Costa.—p. 510.
Another Case of Ayerza's Disease. Mário Moreira.—p. 540.

The Polya Technic for Resection of the Stomach.—Cabeça's serial roentgenograms show conditions before and after in fifteen cases of hour-glass or cancerous stomach in which treatment was by Polya's method of pylorectomy. In 6,941 major operations in the hospitals of Lisbon in the last twenty-five years, this pylorogastrectomy thus figures with only fifteen, although resection of the stomach by various other technics was done in a total of seventy-eight cases. These are tabulated with minute detail. Nearly 44 per cent were cured, and 3.8 per cent much improved. It is an illusion to imagine that postoperative pneumonia can be warded off by avoidance of inhalation anesthesia, because it is liable to develop even with local anesthesia or blocking the splanchnic nerves.

Medicina Ibera, Madrid

20: *241-272 (Feb. 27) 1926*

Genital and Extragenital Venereal Chancroïds; Lymphatic Complications. R. Bertoloty.—p. 241.
*Amebic Dysentery in Children. J. M. Pardo.—p. 245.

Amebic Dysentery in Children.—Pardo relates that two young children, one an infant, aged 9 months, belonging to a healthy Madrid family living in the best conditions, developed dysentery. The infant was affected first and amebas were found in its stools. Nothing could be found to explain the infestation until a watchmaker reported that his child had been having a similar disease, and encysted amebas were found in his stools. The nurse of the infant in the first family had been having a watch repaired, and the watchmaker and the nurse had evidently been intermediate carriers of the amebas. The cure was realized in all with emetine, never over 0.005 Gm. per kilogram. The fever was not high in any of the children, but the urine showed large amounts of urates, and symptoms from dehydration were pronounced.

Prensa Médica Argentina, Buenos Aires

12: 877-904 (Feb. 10) 1926

Amebiasis in Man. M. R. Castex and D. Greenway.—p. 877. C'tn.
*Tumor in Cerebellopontile Angle. Alurralde and Sepich.—p. 883.

Cerebellopontile Hemorrhagic Sarcoma.—Nineteen illustrations show the various differential points and results of microscopic examination in a case of tumor occupying the right cerebellopontile angle in a man, aged 27. The first appreciable symptoms had been diplopia and frontal-occipital headache, with exacerbation during muscular effort or sneezing. Under intravenous treatment these symptoms improved but returned more severe in a year, with others. Necropsy revealed a hemorrhagic sarcoma, 4 by 6 by 8 cm., which shelled out easily. The operation had been deferred too long.

Revista de la Asoc. Médica Argentina, Buenos Aires

39: *109-220 (April) 1926*

*Publications of the Argentine Medical Association. Waldorp.—p. 109.
*Encephalitis in Children. Lanfranco Ciampi and Ameghino.—p. 119.
*Parathyroid Treatment. B. A. Houssay.—p. 145.
Recent Progress in Treatment of Pulmonary Tuberculosis. G. Aráoz Alfaro.—*p. 173.*
Social Service in Hospitals. M. V. Carbonell and T. A. Tonina.—p. 183.
Factors Which Influence Bottle Feeding of Infants. Garrahan.—p. 204. Idem. Mariano Etchegaray.—p. 212.

Publications of the Argentine Medical Association.—The *Revista* was the exclusive organ of the association until 1920. At that time, the publication committee began to issue separate journals for the various groups of specialists forming the association. Now there are eleven of these publications which appear promptly after the meetings, while the *Revista* appears at irregular intervals. In 1925, fifty-eight issues were published in all, a total of 3,851 pages, representing 358 articles by 436 authors; many have been summarized in these columns.

Medicolegal Aspect of Epidemic Encephalitis in Children.—Ciampi and Ameghino comment on the necessity of a penal code for children. They emphasize the medicolegal aspect of the sequels of epidemic encephalitis in the young, describing four police cases.

Parathyroid Treatment.—Houssay remarks that analysis of his own experience and the literature has convinced him that much may be hoped from parathyroid treatment. The most striking result observed in the experimental research at the physiology institute was in a dog that had had the thyroid and parathyroids removed and had been fed on raw meat. The intense tetany that followed subsided under parathyroid treatment by the mouth, and the third day the calcium content of the blood rose to 12.12 mg. per hundred cubic centimeters, but the tetany returned at the same time. The parathyroid extract was then injected intravenously and there was no further tetany. When this was dropped, fatal tetany followed at once. Three pages of bibliography are appended.

Revista de Cirugía, Buenos Aires

5: 1-48 (Jan.) *1926*

What Can Be Realized with Kineplasty According to Personal Experiences to Date. M. Bastos Ansart.—p. 1.
Surgical Treatment in Exophthalmic Goiter. D. Prat.—p. 16.
*Resection of Superior Maxilla. R. V. Hernández.—p. 41.
Surgery for Postoperative Stomach-Colon Fistula. Pasman.—p. 43.
Appendicitic Abscess in Femoral Hernia. Alberto Gutiérrez.—p. 45.

Resection of the Superior Maxilla Without Loss of Blood.—Hernández' experience demonstrates that preliminary ligation of the common carotid artery transforms this operation, allowing it to proceed systematically, cleanly and tranquilly. He gives illustrations of several of the eight cases in which this treatment has been applied for myxosarcoma or malignant epulis. In a large myxosarcoma of the orbit, in a boy, the whole orbit was cleared out through a supra-orbital incision, in a single mass. Although the processes were all far advanced when the surgeon was consulted, yet recurrence after the operation was very slow if it occurred at all.

Revista de Medicina y Cirugía, Caracas

9: 23-40 (Feb. 28) 1926

Mercury in Treatment of Malaria. G. Cremonese.—p. 23.
Case of Pituitary Tumor at Caracas. J. Izquierdo.—p. 31.
Adhesions Simulating Chronic Appendicitis. Rivas Morales.—p. 33.

Revista de Medicina y Cirugía, Havana

31: 43-78 (Jan. 25) 1926

Chronic Traumatic Lesions of the Brain. W. Sharpe.—p. 43.
*Retention of Urine in Prostatitis. J. B. Ruiz.—p. 57.
Anomalies in the Brachial Plexus. Buigas et al.—p. 61.

Diagnostic Import of Persisting Retention of Urine in Acute Prostatitis.—Ruiz describes six out of a larger list of cases in which prolonged retention of urine in acute prostatitis proved to be a sign of suppuration in the prostate. With dysuria growing constantly more painful and the amount of urine voided less and less, sometimes requiring catheterization, with symptoms suggesting acute prostatitis, an abscess in the prostate can be confidently foretold.

Revista Filipina de Med. y Farmacia, Manila

16: 243-260 (Nov.) 1925

*Study of Typhoid Fever. J. S. Hilario and F. Ira.—p. 244.

The Otani Reaction in Typhoid Fever.—Hilario and Ira have been making a comparative study of the Otani and the agglutination tests in typhoid, and find the former more reliable than the latter. A negative agglutination test does not positively exclude typhoid, while a negative Otani seems to exclude entirely the possibility of typhoid or paratyphoid. It is based on the intensification of the opsonic power by the microbic antigens, as revealed by the phagocytic index. The technic is simple: Four or five drops of blood are drawn into a test tube containing one drop of the sodium citrate solution. When well mixed, a small quantity is taken up in a capillary pipet and to this is added an equal amount of a fine emulsion of the bacilli of the disease in question. After mixing as usual the pipet is sealed in the flame and is placed in the autoclave at 37 C. or in the water bath at 38 C. In ten minutes the tube is withdrawn and a drop of the contents is placed on a slide as for microscopic examination of the blood; it is stained, and the phagocytes are counted. The details in twenty-five cases are given in a table. The test is reliable even in the first two or three days of the typhoid or paratyphoid, and in infants as well as in adults they say.

Semana Médica, Buenos Aires

1: 325-376 (Feb. 18) 1926

*Cholesterol in Pleural Effusion. C. Largos Garcia.—p. 325.
*Asthma and Malaria. Carlos Mainini.—p. 328.
Outcome with Metal Aids in Fractures. M. Fitte.—p. 330.
Which Children Benefit by Open-Air Schools? Garrahan.—p. 338.
Lymphangitis and Adenitis in Mastoid Region. R. Becco.—p. 342.
History and Present Status of Turgidization of Placenta. W. Koerting.—p. 353.
Table for Urologic Roentgenography. Carlos Heuser.—p. 368.
Pseudo-Amebas Formed in Solutions of Salts. A. L. Herrera.—p. 372.

Cholesterol in Pleural Effusion.—Lagos Garcia adds another to the twenty cases on record in which the pleural effusion contained numerous cholesterol crystals. The blood of the boy, aged 13, contained no more than the normal proportion of cholesterol. The tuberculin skin test was positive.

Asthma and Malaria.—The man had suffered from severe asthma for two and a half years, rebellious to all treatment. The patient was not aware that he had latent malaria, but the blood showed a few malaria parasites. Under quinine the spleen returned to normal size, the parasites disappeared from the blood, and there was no further asthma—all in less than six days.

1: 377-428 (Feb. 25) 1926

*Llama *Serum* in Treatment of Syphilis. E. Chabroux.—p. 377.
Melanoderma in Addison's Disease. Goyena and Caorsi.—p. 385.
Cholesterol Pleuritis and Tuberculosis. C. Mainini.—p. 386.
*Two Primary Cancers? A. J. Pavlovsky.—p. 390.
Welfare Work for School Children in Argentina. Tonina.—p. 394.
Present Status of Cancer of the Uterus. J. V. Jiménez.—p. 417.
*Teleroentgenography of the Heart. Martín Miranda Gallino.—p. 421.
The Pathology of Malaria. A. Bignami.—p. 424.

Llama Serotherapy of Syphilis.—Chabroux gives the details of twelve cases of syphilis in which treatment was by Jáuregui and Lancelotti's *method* with an antiserum derived from llamas. In only one case were the favorable results more than briefly transient, and the Wassermann reaction persisted positive in all.

Primary Versus Metastatic Cancer of Liver.—Six months after abdominal hysterectomy for epithelioma of the cervix, the liver developed a large adenocarcinoma with the aspect of primary malignant disease. There was no other sign of metastasis.

Teleroentgenography of the Heart.—Miranda Gallino analyzes with eight charts the mechanical and mathematical factors involved in roentgenography of the heart to obtain the most natural pictures. He found 3.5 meters the most instructive distance for the purpose.

Siglo Médico, Madrid

77: 193-216 (March 6) 1926

*Malignant Degeneration of Gastric Ulcer. González Campo.—p. 193.
Acute Miliary Tuberculosis. J. Valdés Lambea.—p. 196. C'tn.
Cardiac Murmurs. G. R. Gonzalo.—p. 198.
Cure of Lupus Under Common Salt. D. Jiménez García.—p. 199.

Malignant Degeneration of Gastric Ulcer.—González Campo states that in all his practice as an internist, he knows of only three cases of gastric ulcer, treated medically alone, in which cancer developed later, seven to sixteen years after the first symptoms. In his latest hundred cases of gastric cancer, the first symptoms had been noted from two to twelve months before; in nineteen, up to two years, and in one three years. Only nine of the hundred had a history of probable ulcer from five to twenty-one years before, but the clinical history was not decisive, and the lesion may have been in the duodenum, or it may not have been of the hard type. Consequently, even this 9 per cent seems altogether too large a proportion for instances of malignant degeneration of a gastric ulcer. He cites various authorities showing the wide divergence of opinion as to the frequency of cancer developing from an ulcer.

77: 217-236 (March 13) 1926

*Fever in Children. Baltasar Hernández Briz.—p. 217.
"Feminism and Sex." Vital Aza.—p. 219. C'td.
The Death Rate in Spain. F. Criado y Aguilar.—p. 227. C'tn.

Fever in Children.—Hermández Briz quotes Villanova in the thirteenth century as saying "Beware of giving drugs to children and to the aged, and of long continued use of any medicine, even for the young." Children react tumultuously to even slight causes, the reverse of the aged. Their exaggerated reaction to a drug imposes the necessity for simple measures in treatment. A few hours of restriction to water, an enema of sterilized water and a very little castor oil are all that is needed for young children as a rule to correct acute indigestion or effects of chilling, with water externally as the only safe means to combat fever, if it requires combating. As an instance of the striking lack of reaction in the aged, he mentions the necropsy surprise of acute total pneumonia of the right lung found in one aged woman who had not complained of symptoms. He warns against purging children, quoting Martín Martínez in the seventeenth century who compared the purge to a thief who carries *off* treasure along with much that is useless.

Archiv für exp. Pathologie und Pharmak., Leipzig

112: 261-378 (May) 1926

The Active Substances of Digitalis Leaves. M. Cloetta.—p. 261.
Effects of Poisons on Surviving Frog Kidney. I. Noguchi.—p. 343.
Pituitary Extract and Renal Function. K. Fromherz.—p. 359.
*Action of Liquid Petrolatum *on Intestine*. A. Lánczos.—p. 365.

Action of Liquid Petrolatum on the Intestine.—From fluoroscopic studies on cats Lánczos concludes that liquid petrolatum cannot be regarded simply as a lubricant. It *hastened the* passage of the contrast meal through the stomach and small intestine, and visibly increased peristalsis in these organs. It did not appear to affect the large intestine. Defecation was excited in the normal manner from the rectum, and usually did not result in complete evacuation of the intestine. The closure of the sphincters of the pyloric antrum and of the pylorus brought about by morphine was almost without exception weakened or prevented by liquid petrolatum. It is probable that the therapeutic effect of the oil is owing to its antispasmodic action in keeping away irritations, but it may be due to direct nervous stimulation of movements in the stomach and bowel.

Archiv für die gesamte Physiologie, Berlin

212: 375-650 (May 17) 1926

Permeability of Membranes for Certain Ampholytes. O. Risse.—p. 375.
Physiology of Pulling Oneself Upward. Hanf and Bethe.—p. 403.
*Experiments in Growth. P. Junkersdorf.—p. 418 and p. 441.
Influencing Decerebrate Rigidity. F. Leiri.—p. 465.
Effect of Exercise on Horse's Blood. Scheunert and Müller.—p. 468.

Reflex Changes in Blood Cell Count. Scheunert and Krzywanek.—p. 477.
*Experiments in Hyperthyroidism. R. E. Mark and A. Stradal.—p. 486.
The All-or-Nothing Law and Sense Perception. K. Stüber.—p. 501.
Experiments in Stimulation of Separate Elements of Heart Muscle. F. Schellong and F. Tiemann.—p. 515.
Epinephrine and Basal Metabolism. Abderhalden and Gellhorn.—p. 523.
Foreign Body Reflex in the Eye. O. Weiss.—p. 535.
Plurisegmental Innervation. W. Quednau.—p. 541.
Local White Phenomenon under Colored Lighting. S. Krauss.—p. 547.
The State of Calcium in the Serum. R. Mond and H. Netter.—p. 558.
Alkali and Acid Muscle Reactions: Fuchsin Stain. Wetochin.—p. 569.
Elimination Experiments on Vowel Sounds. K. Eisenberg.—p. 574.
Suprarenalectomy and Muscle Strength. K. Hirsse.—p. 582.
A Hormone of Heart Action. L. Haberlandt.—p. 587.
The *p*H of the Urine in the Course of One Day. E. Rannenberg.—p. 601.
Differentiating Tissue Constituents by Their Combining Power with Congo Red. Kreidl and E. Nirenstein.—p. 642.
Muscle Shortening and Contraction. Uexküll and Stromberger.—p. 645.
The Skin and the Electrocardiogram. W. Lueg.—p. 649.

Experimental Studies in Growth.—In the first of these articles Junkersdorf and Gottschalk review the literature on the subject of the growth impulse. This impulse is determined by heredity, and to a lesser extent by the nutrition of the mother during gestation; after birth it cannot be altered. It can be checked by deficiency in nutrition, but cannot be increased beyond its physiologic limit or changed in direction. In the second article, they report the results of experiments on thirty-seven pups of eight litters. The animals were weighed at birth and at various intervals. They were killed at different ages and the individual organs weighed. Thus weight curves were constructed for each organ. For the liver, kidneys and thyroid the weight of the organ compared with the total weight of the animal was highest at birth. For the heart and suprarenals, it varied only within the normal limits for the adult. The relative weight of the spleen was low at birth and highest at three weeks. That of the thymus was constant for the first two weeks, rose just before the onset of intensive growth, and declined after the suckling period of four weeks. The chemical changes during growth will be reported in a later paper. These experiments were made possible by the support of the Rockefeller Foundation.

Experiments in Producing Hyperthyroidism in Dogs.—Mark and Stradal report that oral or subcutaneous administration of an almost iodine-free thyroid preparation to seven dogs caused no complete hyperthyroidism.

Archiv für path. Anatomie und Physiologie, Berlin

260: 521-855 (April 30) 1926

*Arthritis Deformans. J. Heine.—p. 521.
*Ranke's Primary Complex in Tuberculosis. P. Schürmann.—p. 664.

Arthritis Deformans.—In this comprehensive work the pathologic changes in the various structures of joints with deforming arthritis are described and illustrated from the gross and microscopic specimen, and their genesis discussed. Heine tabulates material from 1,002 cadavers and presents detailed statistics on the incidence and manifestations of the disease in the individual joints for the decades from 15 to 95 years, and for each sex separately. The order of frequency in which he found the larger joints involved was the knee, acromioclavicular, elbow, hip, and shoulder. Up to the seventieth year, the first metatarsophalangeal joint came next to the knee. Spondylitis deformans most often involved the thoracic spine alone or the lower thoracic and upper lumbar. The various theories of etiology and pathogenesis are critically considered, but he refrains from offering a new one. Tables are given showing the incidence of degenerative joint lesions, arteriosclerosis and osteoporosis of the ribs in 100 cases of carcinoma and fifty cases of tuberculosis and in controls. These do not bear out Rimann's theory, which would make carcinoma and tuberculosis responsible for deforming arthritis, but tend rather to suggest an inhibiting influence on the part of the carcinoma diathesis and of tuberculosis on these three diseases of advanced age.

The Earliest Anatomic Manifestation of Primary Tuberculous Infection.—In this work of nearly 200 pages Schürmann treats of the primary lesion of tuberculosis in its historical aspect and in its anatomic manifestation. In animal experiments, in observations on Jewish infants who contracted tuberculosis from circumcision under circumstances comparable to animal experimentation, in the medical literature for 150 years and in special researches, he finds the view confirmed that the earliest anatomic manifestation of tuberculosis is extensive disease of the lymph nodes, appearing in fresh cases as collections of epithelioid cells, a little later as caseation and in old cases as calcification, with much slighter disease of the area drained. This corresponds to Ranke's "primary complex." In 1,000 cadavers Schürmann found anatomic tuberculosis in 88.9 per cent; in 96.17 per cent of these he was able to demonstrate the above described lesion. In 784 of the 855 cases in which this primary complex was found, it was single, in seventy-one, multiple. The lung was the site in 80.12 per cent. The primary complex was pathognomonic for the primary infection in 85-90 per cent of his entire material.

Archiv für Psychiatrie und Nervenkr., Berlin

77: 179-320 (May 20) 1926

Circular Insanity in the Non-Pyknic Type. K. Kolle.—p. 183.
Time Factor and Conjugate Deviation in Epilepsy. Schnell.—p. 239.
*Eugenics of Marriage and Pregnancy. S. Hirschfeld.—p. 257.
*Sterilization for Eugenic Reasons. E. Kohls.—p. 285.
Eye Muscle Spasm Following Encephalitis. M. Fischer.—p. 303.
Influence of Shock Treatment on Insanity. J. Schuster.—p. 314.
Interpupillary Distance as Gage of Degeneracy. Becker.—p. 317.

Eugenics of Marriage and Pregnancy from the Standpoint of Psychiatry and Neurology.—Hirschfeld reviews the literature. As regards practical eugenics, he takes a conservative standpoint, for our present knowledge does not permit us to foretell with certainty the fate of any individual child as regards inheritance. Heredity is not now given the superlatively important place which it formerly held in the genesis of mental diseases. Injury to or infection of the germ cell or the embryo is not to be confused with pathologic mutation of the germ plasm. While the former may seriously damage the child's physical and mental constitution, their influence extends only to the one generation and has nothing to do with heredity.

Sterilization for Prevention of Mentally Inferior Offspring.—Kohls reviews opinions, statistics and legislation (the latter especially in America) on sterilization of the unfit. It seems to be unquestionably justified in Huntington's chorea, but can be considered only in selected cases of schizophrenia, manic depressive insanity, epilepsy, alcoholism, feeblemindedness or criminal tendency. Of these the indication will be found most frequently in the feebleminded. The constitutional psychopathies must be excluded for lack of sufficient knowledge as to their origin.

Beiträge zur Klinik der Tuberkulose, Berlin

63: 255-383 (April 20) 1926

*Bronchiectasia in Children. K. Klare and P. Reusse.—p. 255.
*Tuberculosis of Mesenteric Nodes. S. Klein.—p. 268.
Epituberculous Infiltration. H. Schlack.—p. 275.
*Metabolism in Tuberculosis. N. Róth.—p. 292.
Fibrin Balls in Pneumothorax. Klinkowstein and Belajewa.—p. 313.
Histogenesis of Liver Tubercle. H. Schleussing.—p. 317.
*Iodized Oil in the Lungs. H. W. Knipping and W. Ponndorf.—p. 329.
Serial Sections of the Thorax. E. Müller.—p. 360.
Pulmonary Tuberculosis with Gastric Ulcer. F. Loben.—p. 370.
*Arsphenamine in Pulmonary Tuberculosis. W. Landau.—p. 373.
Spontaneous Pneumothorax. E. Werner.—p. 379.

Bronchiectasia in Children.—Klare and Reusse found bronchiectasia comparatively frequent in children. Bronchopneumonia, pleurisy and bronchiolitis are predisposing causes. Clinical restitution is possible with beginning cases; the prognosis is unfavorable if the changes are extensive.

Tuberculosis of Mesenteric Nodes.—Klein deals with isolated tuberculosis of the mesenteric lymph nodes. The enlarged nodes are palpable, although sometimes only with difficulty. The ileocecal region is a point of predilection. The Pirquet test is strongly positive. The prognosis is comparatively good. Roentgen-ray treatment is advisable.

Metabolism in Tuberculosis.—Róth reviews all the metabolic aspects of tuberculosis and their consequences for treatment. He confirms the increased oxygen consumption in grave cases.

Iodized Oil in the Lungs.—Knipping and Ponndorf found hardly any indications of resorption of iodized oil by the lungs. It is removed partly by coughing, partly by swallowing.

Arsphenamine in Pulmonary Tuberculosis and Gangrene.—Landau admits that arsphenamine may sometimes cause an exacerbation of pulmonary tuberculosis. On the other hand, he had excellent results with it in a case of gangrene of the lung complicating a pulmonary tuberculosis. He advises to give arsphenamine a trial in every case of pulmonary gangrene.

Deutsche medizinische Wochenschrift, Berlin

52: 901-942 (May 28) 1926

Efficient Obstetrics. H. Sellheim.—p. 901.
*Blood and Ultraviolet Rays. E. v. Schubert.—p. 903.
*Herpes Zoster and Internal Diseases. J. Severin.—p. 906.
Deep Lipomas. H. Schütz.—p. 908 .
*Hiccup in Infants. M. Cohn.—p. 909.
Refractometry with Abderhalden's Test. J. Schnupp.—p. 913.
Blood Transfusion. P. Clairmont and M. A. Müller.—p. 914.
Therapeutic Passive Hyperemia. W. Löhr.—p. 920.
Gastrocolonic Fistula. Kuttner.—p. 922.
Scarlatinal Lymphangitis. E. Rüscher.—p. 922.
*The Pituitary and Gastric Mechanism. A. Elkeles.—p. 922.
Bismuth as Diuretic. R. A. Pavlovic.—p. 923.
Health Work for Adolescents. Gettkant.—p. 924.
Physicians' Age Insurance. R. Oppenheimer.—p. 925. C'cn.
Comment. O. Salomon.—p. 926.
Medicine in the Novel, "Laudin." Gumprecht.—p. 927.

Blood and Ultraviolet Rays.—Schubert tested the amount of absorption of ultraviolet rays by comparing the reflected rays with the original radiation. A skin which had been rendered anemic absorbed much less than normal skin. This is due to the strong absorption of the rays (especially of wave lengths below 302) by the hemoglobin. It is probable that this is physiologically important. It ranks hemoglobin close to chlorophyll, for which the importance of light is fully established.

Herpes Zoster and Internal Diseases.—Severin observed a homolateral herpes zoster of the eleventh and twelfth thoracic segments in one case of colic in hydronephrosis, and a herpes of the tenth to the twelfth segments in another. Gallstones were associated in another patient with herpes zoster of the right ninth segment. One patient with contracted kidneys and angina pectoris had herpes of the second to the fifth left thoracic segments.

Hiccup in Infants.—Cohn points out that hiccup occurs even during intra-uterine life. Cooling of the skin and too rapid drinking are provocative causes. Popular remedies, such as putting sugar on the tongue, may help. The sneezing reflex, or provocation of crying, are efficient remedies.

The Pituitary and Gastric Mechanism.—Elkeles found that injection of pituitary extracts inhibited the gastric secretion of acid, but not of chlorides.

Frankfurter Zeitschrift für Pathologie, Munich

33: 327-538, 1926

Pathologic Histology of Glanders. H. Spinner.—p. 327.
Pathogenesis of Large Cysts of the Spleen. R. Howald.—p. 349.
Primary Melanoma of the Spinal Cord. H. J. Schmid.—p. 372.
Parathyroid Hemorrhages in Infants; Spasmophilia. Danisch.—p. 380.
Gastric Mucosa and Chronic Ulcer. F. Büchner and C. Ruf.—p. 406.
Hepatic Cystadenoma of Bile Duct Origin. A. Kelemen.—p. 423.
Influencing the Growth of the Uterus. Jaffé and Ranssweiler.—p. 458.
*Rupture of Cerebral Blood Vessels. H. Lampert and W. Müller.—p. 471.
Spinal Curvatures in Rachischisis. H. Lehmann-Facius.—p. 478.
Case of Carcinoma of the Thymus. H. Voges.—p. 501.
Distribution of Scarlet Red Injected into Vein. Oselladore.—p. 507.
*Congenital Atresia of the Bile Ducts. H. Schuster.—p. 513.
*Periarteritis Nodosa. I. Franz.—p. 521.

The Pressure Required to Produce Rupture of Blood Vessels in Situ in the Brain in Cadavers.—Lampert and Müller attempted to obtain light on the relations between apoplexy and hypertonia by forcing fluid into the cerebral vessels through the common carotid under various pressures. They found that in the cadaver the pressure required to burst a healthy cerebral blood vessel was represented in the carotid by a minimal pressure three or four times as great as the highest blood pressure observed in the carotid in the living subject. Rupture of a vessel occurred only where hypertonia or syphilis of the vessels had been clinically determined, but other factors were evidently necessary, for not in all cadavers thus affected did a like pressure produce rupture. The regions of the basal ganglia and the medulla oblongata were the most frequent sites of vessel rupture.

Congenital Atresia of the Bile Ducts.—From the necropsy examination in two cases in male infants of 5 weeks and 5 months, respectively, Schuster concludes that the cause of congenital atresia of the bile ducts is a chronic ascending inflammation of unknown nature. Bacteria were not found, although in the younger child the process was still acute. About one hundred cases of this condition are reported in the literature.

Periarteritis Nodosa: Report of Five Cases.—Franz failed in transmitting this disease to guinea pigs by implantation of diseased tissue nor could she discover bacteria in microscopic sections. She inclines to the belief that the condition is not caused by a specific microorganism, but may arise secondarily to any infection.

Klinische Wochenschrift, Berlin

5: 969-1016 (May 28) 1926

Pulmonary Tuberculosis. H. Ulrici.—p. 969.
Abderhalden's Test. L. R. Grote.—p. 971.
Action of Thymus. B. Roméis.—p. 975.
*Thallium and Tactile Hairs. A. Buschke and B. Peiser.—p. 977.
*Vaginal Cycle. B. Zondek and S. Aschheim.—p. 979.
*Determination of Heart Output. W. Mobitz.—p. 985.
*Spastic Dysmenorrhea. E. Vogt.—p. 986.
*Urobilin in the New-Born. M. Winternitz.—p. 988.
*Enterococci in Gallbladder. K. Meyer and W. Löwenberg.—p. 989.
Hyperventilation and Epilepsy. H. Pfeiffer et al.—p. 992.
Liver Function Test. J. Halberkann and H. Kähler.—p. 992.
Angina with Lymphoblastosis. J. Preuss.—p. 993.
Dermatoses in Children. O. Ullrich.—p. 994.
Paracelsus. G. Sticker.—p. 997. C'td.
Diathermy in Otorhinology. Hamm.—p. 1015.

Thallium and Tactile Hairs.—Buschke and Peiser fed small doses (0.12 mg.) of thallium acetate to rats. The animals lost all their hair except the tactile hairs. The latter are not innervated by the sympathetic, and their musculi arrectores are striated. This speaks for the action of thallium on the sympathetic. Analogous hairs occur in man in symmetrical moles of the face. The middle part of the eyebrows and the moustache might have a similar significance.

Vaginal Cycle.—Zondek and Aschheim publish details of the technic necessary for utilizing the vagina of castrated white mice for standardization of the ovarian hormone. The ovary must be really removed in toto. The vaginal smears should be made with a platinum loop, avoiding the vestibulum. Otherwise, there will be always some epithelial scales present. Wiping off the external parts only makes it worse. Winding cotton around the head of a pin—as used by Loewe—adds the superficial cells of the finger to the picture, and may thus produce a semblance of estrus. The percentage of the cells does not mean much even with good technic. The injection either produces estrus or it does not.

Determination of Heart Output.—Mobitz uses a slight modification of Henderson and Haggard's ethyl iodide method for determination of the heart-beat volume.

Spastic Dysmenorrhea.—Vogt injects a small amount of vegetable protein intravenously in spastic dysmenorrhea during the colic. It decreases the irritability of the sympathetic. Failures indicate some mental cause for the dysmenorrhea.

Urobilin in the New-Born.—Winternitz confirms the presence of urobilin in the feces, urine, bile and intestinal contents of some new-born infants. It originates in the mother, and is only transmitted to the fetus. A few hours after birth, bacteria invade the intestine of the new-born and cause true autochthonous urobilin formation. There was no evidence of any extra-enteral production of urobilin.

Enterococci in Gallbladder.—Meyer and Löwenberg injected rabbits intravenously with cultures of enterococci. They found them always in the gallbladder. Hemolytic and viridans strains of streptococci showed no such predilection. They believe that most of the alleged streptococci obtained from bile and the biliary passages—including the cases of Schottmüller's cholangitis lenta—were enterococci.

Medizinische Klinik, Berlin

22: 833-870 (May 28) 1926

Pharmacology of Mixtures. E. Bürgi.—p. 833.
*Goiter Heart. A. W. Meyer and E. Sulger.—p. 838.
Endaortitis Lenta. W. Ceelen.—p. 842.
*Endoscopy in Constipation. L. v. Aldor.—p. 843.
Arachnodactylia. H. Schlack.—p. 845.
*Paradoxic Action of Insulin. E. Foerster.—p. 846.
Paratyphoid Sepsis. F. Lehr.—p. 848.
*Auscultation of Aorta. W. Loewenstein.—p. 849.
Treatment of Varicose Veins. W. Noher.—p. 849.
*Sulphur Baths. E. Maliwa.—p. 851.
Survey on Surgery. Kroll.—p. 856. C'td.
Health Certificates. M. Hirsch.—p. 867.
Tuberculosis of Ear and Upper Air Passages. F. Blumenfeld and O. Pilll. Supplement.—pp. 1-40.

Goiter Heart.—Meyer and Sulger found, among ninety goiter patients, thirty-nine with enlargement of the heart. Both ventricles were usually affected. The hypertrophy of the heart was more frequently due to stenosis of the trachea than to hyperthyroidism. Reexamination of the patients who had been operated on revealed a persistence of the hypertrophy in all but seven cases. Some (fourteen) of the others—including those who had had normal hearts previously—had a larger heart two or three years after the intervention than they had had before.

Endoscopy in Constipation.—Aldor noticed that the sigmoidoscope could be introduced quite easily and far in patients with grave hypotonic constipation. The mucous membrane was smooth and without folds. He had good results in such patients with subcutaneous injections of 1-2 cc. of pituitary extracts. The injection had to be repeated once or twice a week.

Paradoxic Action of Insulin.—Foerster treated a diabetic patient who had a history of hives after injections of milk. The patient became sugar-free after insulin. A week later he began to excrete increasing amounts of sugar and acetone. The condition grew gradually worse in spite of increased doses of insulin (up to 160 units within four hours), to which the patient reacted with mild hives. He improved after the insulin was discontinued and oatmeal diet instituted.

Auscultation of Aorta.—Loewenstein recommends auscultation of the second aortic sound in the triangle between the heads of the right sternocleidomastoid muscle and the clavicle.

Sulphur Baths.—Maliwa injected a bismuth salt subcutaneously in mice, which he then partially submerged in water containing hydrogen sulphide. The bismuth deposit under the skin was blackened as evidence of resorption of sulphur by the skin. The breath of the mice also contained hydrogen sulphide, for it blackened a paper moistened with a solution of lead acetate.

22: 871-908 (June 4) 1926

Ovariogenous Hemorrhages. J. Novak.—p. 871.
Balneotherapy in Neuroses. M. Löwy.—p. 875.
"Exposure or Predisposition?" F. Reiche.—p. 879.
*Tabetic Symptoms After Ergotamine Treatment. H. Panter.—p. 880.
Cheyne-Stokes and Tachycardia. S. Wassermann.—p. 881.
*Methenamine in Encephalitis. A. Simonena.—p. 883.
Taxis in Incarcerated Hernia. G. Neugebauer.—p. 885.
Ampule for Blood Injections. G. Ockel.—p. 886.
*Injury of Cornea from Silver Nitrate. J. Fejér.—p. 886.
Megacolon and Megasigmoid. Schemmel.—p. 887.
Chromoscopy of the Stomach. K. Glaessner.—p. 887.
Employers' Liability for Hysteria. H. Engel.—p. 889.
Diuretic Action of Biliary Acids. R. Semler.—p. 891.
Survey on Surgery. Kroll.—p. 895. C'cn.
The Decree on Marriage Certificates. M. Hirsch.—p. 905. C'cn.

Tabetic Symptoms After Ergotamine Treatment.—Panter gave an exophthalmic goiter patient for two days three daily injections of 0.5 mg. of ergotamine tartrate—supplementary to quinine and digitalis. He resected the goiter on the third day, and repeated on the fourth the same dosage of ergotamine. He gave only one injection on the fifth day. At this time the patient's pupils were miotic and did not react. The patellar and other tendon reflexes were also abolished. This condition lasted for ten days. The reflexes became gradually normal in the following week.

Methenamine in Encephalitis.—Simonena had good results in the lethargic stage of encephalitis with daily intravenous injections of 5 cc. of a 40 per cent solution of methenamine for about ten days.

Injury of Cornea from Silver Nitrate.—Fejér observed a case of grave injury to the conjunctiva of a new-born infant. The midwife had used by mistake a 10 per cent solution of silver nitrate for instillation.

Mitteil. u. allg. Pathol. u. path. Anat., Japan

2: 407-642 (April 18) 1926

*Osgood-Schlatter's Disease. S. Sekiguchi and O. Tashiro.—p. 407.
*Diphtheritic Renal Disease. T. Dake.—p. 435.
*Renal Disease from Typhoid and Paratyphoid B Toxins. Id.—p. 471.
*Acute Renal Diseases from Cocci. T. Dake.—p. 495.
*Renal Disease from Uranyl Nitrate. T. Dake.—p. 519.
Solitary Serous Cysts of the Kidney. M. Koike.—p. 557.
Scar Carcinoma. M. Iwamoto.—p. 573.
Primary Malignant Papilloma of the Renal Pelvis. M. Muto.—p. 599.
*Pseudomyxoma of the Peritoneum. W. Senokuchi.—p. 617.

Apophyseopathia: Osgood-Schlatter's Disease.—Sekiguchi and Tashiro review, from the pathogenic standpoint, thirty-three cases of Osgood-Schlatter's disease of the tubercle of the tibia, in which operation was performed. Histologic examination failed to show any traumatic change in the projection of the tubercle, or any signs of inflammation, and the search for bacteria was negative in result. None of their cases presented any signs of late rickets or of endocrine disturbance. Spur formation at the site of insertion of the patellar ligament was never seen in early cases. Sekiguchi and Tashiro believe that the condition is due to a local growth anomaly of the epiphyseal line; trauma may stir up the process. The article is illustrated and is followed by a comprehensive bibliography.

Acute Nephropathies from Bacterial Toxins.—In this series of four studies Dake examined the blood and urine, especially for chlorine and nitrogen, of rabbits inoculated with various bacterial toxins or bacteria or injected with a chemical. The experiments confirm Ludwig's theory of urinary secretion. As to the two theories of the origin of the increase of residual nitrogen in the blood, the renal retention theory and the extrarenal theory (increased catabolism of body protein, disturbance of liver function, etc.), the experiments show both mechanisms working together. The experiments confirm the extrarenal cause of renal edema. All poisons attack the extrarenal vessels directly. Dake found heightened sensitivity to various cocci and to diphtheria bacilli in rabbits previously treated with the corresponding bacteria or toxins, but with typhoid and paratyphoid B bacilli the opposite was true. This agrees with clinical experience; in tonsillitis, scarlet fever and diphtheria, there is an incubation period, but in disease of the kidney accompanying typhoid or paratyphoid no such incubation is apparent. The articles contain numerous tables, illustrations and full bibliographies.

Pseudomyxoma of the Peritoneum in a Case of Primary Adenocarcinoma of the Common Bile Duct.—From a table giving a brief abstract of twenty-eight cases of pseudomyxoma of the peritoneum, aside from those originating in ruptured ovarian cystomas, Senokuchi's case appears to be unique, in that the primary focus was an adenocarcinoma of the common bile duct. In most of the other cases, the primary focus was in the appendix. Necropsy revealed enormous masses of gelatinous material filling the entire peritoneal cavity. Numerous cysts containing gelatinous masses were found in and around the spleen, and small cysts in the appendix and small intestine. In the duodenum metastatic nodules were present.

Monatsschrift für Kinderheilkunde, Leipzig

32: 193-288 (May) 1926

*Bacteriotherapy of Dyspepsia. A. Popowa.—p. 193.
Carbohydrate Metabolism and Toxicosis. Fedynski et al.—p. 205.
Respiration in Encephalitis. C. Behmack.—p. 226.
"Postinfluenzal Dilatation of the Heart." D. Lebedev.—p. 237.
*Poisoning with Sulphur Ointment. F. Basch.—p. 239.
Surgery of Pylorostenosis. Schulte.—p. 243.

*Skin Hypersensitiveness. H. Schlack.—p. 248.
*Exfoliating *Dermatitis.* W. Szarka.—p. 253.
*Thrombosis of Sinus. O. Herz.—p. 256.
"Liver Function Tests." Duzár and Hensch.—p. 265.
*Insulin in Ketonuria. R. Freise and H. Boeringer.—p. 269.

Bacteriotherapy of Dyspepsia.—Popowa attributes to the endogenous bacterial flora an important rôle in dyspepsia of infants and children. She used with great success a mixture of *Bacillus bulgaricus,* yeast and carbohydrates in milk.

Poisoning with Sulphur Ointment.—Basch observed several deaths among infants treated for scabies with a 10 per cent sulphur ointment. The infants became dyspeptic, developed fever, and died in one to three weeks. Colitis and fatty infiltration of the liver were found at necropsy. He attributes the toxic effects of sulphur in infants to the fact that the surface area of their body is much larger in proportion to the weight than in adults. Scratches and other lesions of the skin also contribute to the resorption. Experiments on animals indicate that the absorbed sulphur is converted into hydrogen sulphide.

Skin Hypersensitiveness.—Schlack irritated the skin in 204 children with a toothbrush soaked in oil of turpentine, formaldehyde or a decoction of arnica. Children with the exudative diathesis or with scrofula presented an abnormally strong reaction four times more frequently than the rest. Yet the reaction was also excessive in some of the controls. Tuberculosis alone did not change the reactivity.

Exfoliating Dermatitis.—Szarka observed an exfoliating dermatitis in a twin nine days after her sister had developed a typical pemphigus of the new-born. She attributes both diseases to the same micro-organisms (staphylococcus aureus and streptococci). This confirms the opinion of the clinicians who regard exfoliative dermatitis as a grave form of pemphigus.

Thrombosis of Sinus.—Herz incriminates injuries suffered during birth for the early cases of otitis media in infants. The hemorrhage entails a predisposition to suppuration. Thrombosis of a sinus follows, but the disease becomes manifest only after formation of metastatic abscesses in the lungs and empyema.

Insulin in Ketonuria.—Freise and Boeringer emphasize the occurrence of ketonuria in children kept sugar-free with insulin. They explain it by the lowering of the blood sugar. Ketonuria without hyperglycemia is an indication for addition of carbohydrates or for a decrease of the dose of insulin.

Münchener medizinische Wochenschrift, Munich

73: 895-936 (May 28) 1926

*Perspiration. O. Moog and K. Buchheister.—p. 895.
Vaccine Treatment of Infections. Hilgermann.—p. 898.
**Pituitary Cachexia.* *Reye.*—p. 902.
Sepsis After Infectious Sore Throat. H. Lenhartz.—p. 906.
*Zinc Chloride in Cancer. Steinthal.—p. 908.
*Hour-Glass Stomach. M. M. Gubergritz.—p. 909.
The Passing of Chlorosis. K. Classen.—p. 911.
Puerperal Fever. H. Schmidt.—p. 912.
Vaccination and General Paralysis. Schükry and Kerim.—p. 915.
Measuring Tables. Von Eickstedt.—p. 915.
Balneotherapy and Climatotherapy. H. H. Westkott.—p. 916.
Chemistry of Proteins. W. Grassmann.—p. 918.

Perspiration.—Moog and Buchheister used Jürgensen's method of microscopic observation of sweat secretion. They confirm the permanent secretion on hands and feet, but not on other parts of the body except during excitement of the subject or after pilocarpine injections. Atropine inhibits the secretion more effectually than epinephrine. Histamine has no influence. Passive hyperemia inhibits the secretion. Some of their observations can be explained only by assuming a direct perspiration of water through the skin—added to the insensible secretion of the sweat glands.

Pituitary Cachexia.—Reye reports the histories of three women who became apathetic after delivery, and presented a syndrome resembling to a certain extent myxedema: low metabolism, white or yellowish skin, swollen face, loss of teeth, eyebrows and all the hair on trunk and extremities, amenorrhea, low blood pressure and temperature, drowsiness and chilly feeling. One of them reacted to administration of thyroid by symptoms of hyperthyroidism. Injection and administration of preparations from the anterior lobe of the pituitary were followed by a remarkable improvement.

Zinc Chloride in Cancer.—Steinthal recommends cauterization with zinc chloride in treatment of inoperable carcinomas.

Hour-Glass Stomach.—Gubergritz determines the lower border of the splashing phenomenon of the stomach, and repeats the examination after half an hour. He found a shifting of the border downward and to the right in nine patients with hour-glass stomach. Atropine shortens the time of the shifting of the level.

73: 937-976 (June 4) 1926

*Transfusion in Pernicious Anemia. G. Denecke.—p. 937.
Differentiation of Bacteria. L. Bitter et al.—p. 940.
Roentgen Diagnosis of Sinuses. H. Richter.—p. 941.
The Skin and the Visible Rays. W. Schultze.—p. 943.
*The Skin and the Exudative Diathesis. A. S. Sokolow.—p. 945.
Science and Athletics. K. Fürst.—p. 947.
Dangers of Insulin. W. Schemensky.—p. 948.
Local Anesthesia in Hernia. S. Ostrowski.—p. 950.
Sigmoid Flexure on the Right Side. R. v. Hösslin.—p. 951.
Physical Treatment in Gynecology. A. Steiger.—p. 952.
Treatment of Pyelitis. H. Hehlweg.—p. 954.
"Removal of Goiter Without Ligation." J. L. Müller.—p. 954.
"Sugar Mobilization from Insulin." Fornet and Christensen.—p. 955.
"Industrial Hygiene." L. Teleky.—p. 955.
*"*The Haff Disease.*" O. Lentz.—p. 956.
Folklore Among the Laplanders. L. Kohl.—p. 957.
Nephritis with Edema. C. R. Schlayer.—p. 959.
Social Service in Tuberculosis. Kattentidt.—p. 961.

Blood Transfusion in Pernicious Anemia.—Denecke used at Morawitz' clinic simple defibrination of the blood by glass splinters. Then he filtered the blood through gauze, kept it for a few hours in the ice-box, to diminish the toxicity of the serum, and then injected it. He resorts to this transfusion when the patient is refractory to arsenic, or when he is nearly dying, although in the latter case, it helps only if the bone marrow is still capable of a reaction.

The Skin and the Exudative Diathesis.—Sokolow believes in the anaphylactic cause of skin diseases in children with the exudative diathesis. He advises to change the diet completely—for instance, if the child has been drinking cow's milk, he advises to avoid not only this milk, but also butter and beef. Sometimes he adds injections of the mother's or cow's milk, and calcium chloride. The latter may also be used locally in a 5-10 per cent solution. He reports remarkably fine results from treatment on these principles, especially in infants.

"The Haff Disease."—Lentz emphasizes the fact that arsenic had been found in the specimens of water taken from the Haff, and that its amount decreased and the disease disappeared after the government took measures to avoid further pollution of the water.

Strahlentherapie, Berlin

22: 379-577, 1926

Ion Gage of Roentgen Ray Intensity. O. Gaertner.—p. 379.
Distribution of Radiant Energy from Radium. Mallet and Coliez.—p. 417.
The Roentgen Unit as Energy Unit. L. Grebe.—p. 438.
The Roentgen Photometer. H. Wintz and W. Rump.—p. 444.
Qualities of Roentgen Rays, Biologic Action. Wintz and Rump.—p. 451.
Biologically Equivalent Radium and Roentgen Rays. Schneider.—p. 460.
The Roentgen Ray and the Human Organism. P. Lapatsanis.—p. 484.
Hyperemia as Sensitizer in Roentgen Irradiation. W. Wynen.—p. 503.
Sensitization of Skin to Ultraviolet Light. Linser and Kropatsch.—p. 514.
Early Effects of Roentgen Rays on the Skin. O. Hilsnitz.—p. 525.
*Roentgen Rays and Blood Cholesterol. Levy-Dorn and Burgheim.—p. 538.
*Treatment of Perimandibular Phlegmon. F. Pordes.—p. 550.
Uterine Cancer Made Operable by Irradiation. H. Seidemann.—p. 554.
Safety Device for Roentgen Ray Filter. Irle and Bergerhoff.—p. 562.
Apparatus for Irradiation of Cancer of Cervix. T. Brandess.—p. 569.
Short Wave Ultraviolet Rays. F. Dannmeyer et al.—p. 578.

The Influence of Roentgen Irradiation on the Cholesterol Content of the Blood in Health and Disease.—The following observations made by Levy-Dorn and Burgheim are offered with a view to their utilization in the diagnosis of malignant tumors. In a large healthy dog and in patients with various pathologic conditions other than malignant tumors, roentgen irradiation was followed by a sudden fall, almost to the vanishing point, of the cholesterol content of the blood. In patients with carcinoma or sarcoma, on the contrary, irradiation was followed by increase in the blood cholesterol, but only so long as the malignant tumor remained in the body. Roentgen sickness appears to depend on the cholesterol content of the blood. In forty-two carcinoma cases observed, there was no roentgen sickness. Postoperative irradiation, however, was followed by a sudden fall in blood cholesterol and by roentgen sickness. In carcinoma, before irradiation, the percental cholesterol content of the whole blood is less than that of the blood serum, while in other pathologic conditions the opposite is true.

Vital Indication for Roentgen-Ray Therapy in Perimandibular Phlegmon.—Pordes strongly recommends the roentgen ray in small doses in the treatment of perimandibular phlegmon. It has no prophylactic value.

Wiener klinische Wochenschrift, Vienna

39: *621-648 (May 27) 1926*

*Angina Pectoris. J. Pal.—p. *621.*
**Ulcers in Genital Prolapse.* F. Kermauner.—p. *623.*
*Neurotropic Viruses. R. Kraus and J. Takaki.—p. *624.*
Insulin and Blood Catalase. G. Török.—p. 625.
"Sensitization to Roentgen Rays." E. Petry.—p. 631.
Tendencies in Dermatology. L. Arzt.—p. 634. C'cn.
*Prevention of Scoliosis. J. Hass.—p. 636.
"*Experiments in Animals.*" A. Eiselsberg.—p. *639.*
Roentgen Study of the Colon. Kienböck. Supplement.—pp. 1-10.

Angina Pectoris.—Pal injects in angina pectoris a derivative of atropine. He saw a few good results from paravertebral injections.

Ulcers in Genital Prolapse.—Kermauner attributes the ulcers in prolapse to rupture of the senile mucosas. They are not caused by a decubitus.

Neurotropic Viruses.—Kraus and Takaki applied the Ascoli technic of cocto-antigen in study of neurotropic viruses by the complement fixation method. Interesting results have been obtained in vaccinia, encephalitis, hydrophobia and herpes. The results indicate that the encephalitis observed recently in some vaccinated children was not caused by the vaccinia virus.

Prevention of Scoliosis.—Hass would begin with the infant. Too early sitting up and standing is dangerous. It is best to let the child creep. Carrying the child around is another cause of scoliosis. If the parents insist on it, they should not carry the child always on one arm. Flat mattresses in the school age are *important.* With beginning scoliosis, the children should lie on the concave side. Sitting all the time or carrying heavy loads at puberty should be avoided. A scoliotic child needs a physician, not a teacher of gymnastics.

39: *649-680 (June 3) 1926*

[illegible] E. Epstein.—p. *649.* *C'td.*
[illegible] New-Born. H. Abels.—p. 653.
[illegible] topic Pregnancy. R. Stiglbauer.—p. 656.
[illegible]—p 661.
[illegible] F[illegible] and Krasso.—p. *662.*
[illegible] nds. O. Burkard.—p 665.
p. *666.*
[illegible] 1-19.

[illegible] examined 5,000 new-[illegible] before birth—for the soft-[illegible] 3 cm. above the lesser [illegible] ure of the linea innomi-[illegible] er occurred with breech [illegible] every tenth first-born [illegible] of the children of multip-[illegible] underweight. In rare cases, [illegible] in other parts of the skull, [illegible] fetus.

Ectopic Pregnancy.—Stiglbauer [illegible] an ectopic pregnancy in a woman [illegible] a-uterine pregnancy. The latter pro-[illegible] livery.

[illegible] emphasizes the fact that cauterization [illegible] membrane may sometimes prevent or [illegible] of hay-fever.

Zeitschrift für Kinderheilkunde, Berlin

41: 261-411 (June 2) 1926

*Buttermilk and Water Metabolism. W. Röckemann.—p. 261.
*The Physique of Diabetic Children. Priesel and Wagner.—p. 267.
Infection and Nutrition. S. Levy.—p. 279.
Diabetes in Children. W. Gottstein and A. Bohe.—p. 287.
**The Dick Test.* E. Nobel and H. Orel.—p. *294.*
*The Dick *Test in Children.* H. Frenkel and A. Margolis.—p. 302.
*Metabolism in Epilepsy. H. *Vollmer and* J. Serebrijski.—p 314.
*Blood Chemistry in Pneumonia. Nassau and *Pogorschelsky.*—p. *326.*
Sedimentation Speed After Pirquet Test. A. Trias.—p. 331.
Cystic Fibrous Osteitis. W. Tobler.—p. 334.
Mongolian Spots. M. Zarfl.—p. 356.
Protein Intake and *Organic Acids.* O. Budde.—p. 370.
Organic Acids in Urine. J. Brock.—*p. 378.*
Acute Polyarthritis with Chorea. K. Lepehne.—*p. 394.*
Chorea with Acute Polyarthritis. M. Pfaundler.—*p. 397.*
Pseudohypertrophy of the Pyramid. H. Baar.—p. 399.
Hemihypertrophy of the Face with Buphthalmos. H. Süss—p. 404.
Seasons and Weight in Tuberculosis. *H. Orel.*—p. 409.
"Albumin Milk-Butter-Flour Mixture." K. Ochsenius.—*p. 412.*

Buttermilk and Water Metabolism.—Röckemann frequently observed an increased diuresis during administration of buttermilk. He explains it by the action of lactic acid on the colloids.

The Physique of Diabetic Children.—Priesel and Wagner studied the physique, growth and development *of diabetic* children. Anomalies of constitution were frequent. The development, including the sexual, of correctly treated diabetic children was normal. No difference was *noted between* the children who were treated with diet alone *and those with* addition of insulin. Both methods have, however, their *strict* indications.

The Dick Test.—Nobel and Orel applied the Dick test to ninety-seven children. Two of them contracted scarlet fever later. One of these—with an abortive scarlet fever—had been Dick negative. They mention another similar case, and conclude that the specificity of the reaction is questionable, even if the results of *immunization* are good.

The Dick Test in Children.—Frenkel and Margolis made Dick tests in 542 children and forty-four adults. They found the reaction specific. Only Dick-positive children contracted scarlet fever, and most of these became negative afterward. The results were *independent of the Mantoux and Schick* tests. Negative pseudoreactions probably indicate susceptibility. Serums from Dick-positive children may produce the blanching phenomenon.

Metabolism in Epilepsy.—Vollmer and Serebrijski made metabolism experiments on a boy, aged 6, with grave epilepsy. Seizures were more frequent with alkalization even with salt-poor diet. Acidosis worked better. Calcium chloride causes acidosis but increases the chlorine content of the serum. Calcium lactate was better. *Theobromine sodium salicylate* proved valuable in increasing the elimination of *chlorine.* The seizures were always preceded by low *acidity of the* urine, and were followed by increased acidity. They *emphasize* the possible individual differences.

Blood Chemistry in Pneumonia.—Nassau and Pogorschelsky found in fatal cases of bronchopneumonia in infants an increased concentration of potassium, and especially a decrease of dextrose in the blood. The blood calcium was lower in some of the children.

Zeitschrift für *Tuberkulose, Leipzig*

45: 177-*272* (May) 1926

Paths of Infection. P. Huebschmann.—p. *177.*
*Sanocrysin in Tuberculosis. J. Zadek and A. Sonnenfeld—p. 182.
Sedimentation Speed and Sanocrysin. *Katz and* Leffkowitz—p. 193.
Gold in Pulmonary Tuberculosis. K. Henius.—p. *199.*
Treatment of *Pulmonary* Tuberculosis. E. Guth.—p. 206
Serodiagnosis of Tuberculosis. H. Schulte-Tigges.—p. 212.

Sanocrysin in Pulmonary *Tuberculosis.*—*Zadek* and Sonnenfeld restrict the sanocrysin *treatment to grave forms* of productive exudative pulmonary *tuberculosis, especially* with cavities and recent clinical manifestations. Purely exudative caseous processes are less *suitable.* Fibrous or *miliary forms* were not *influenced.* Intestinal tuberculosis, cachexia, albuminuria *and syphilis* are contraindications.

Zeitschrift für urologische Chirurgie, Berlin

19: 253 395 (May 18) 1926

Caulk's Punch Operation for Small Prostates G van Houtum —p 253
Operation for Deep Seated Ureteral Stones. W. Lemberger —p 259.
Pelvic Kidney W Dreyfus —p 277.
*Vital Imbibition by Mucosa of Urinary Tract. W. Suchow —p 297.
Pathologic Importance of Accessory Renal Vessels. R Andler.—p 305.
Herpes of the Bladder. J Schiffmann —p 342
Pathogenesis and Treatment of Ureterocele J. Gottlieb —p 345.

Affinity of the Mucosa of the Urinary Apparatus for Colloidal Solutions.—Suchow's experiments demonstrate a remarkable affinity of the mucosa—especially of the bladder—for taking up and retaining a vital stain injected intravenously, while the same stain injected into the lumen does not penetrate into the mucosa The experiments were made on rabbits, and they throw light on the therapeutic influencing of the mucosa by substances from the blood stream The particles of the stain rapidly accumulated in the intercellular substance. In time they were resorbed and gradually disappeared Colored plates show the accumulation of the dye (lithion-carmine) in the mucosa, even in half an hour after intravenous injection of 10 cc. per kilogram of a 2 5 per cent solution.

Zeitschrift für Urologie, Leipzig

20: 321 399, 1926

*[illegible] r. A Fryszman —p 321.
*[illegible] Sternberg —p 329.
*[illegible] A v Adler Racz —p 336.
Anesthesia of Urethra and Bladder F. Schlagintweit —p 347.

Diagnosis of Calculi and Tumors in the Bladder.—Fryszman takes the roentgen-ray picture with the patient in the Trendelenburg position, in dubious cases, and expatiates on the numerous advantages of this position It is particularly instructive with tumors, especially after the bladder has been filled with air. He gives illustrations of the technic and results of this pneumocystography.

Technic of Endoscopy.—Sternberg discusses the direct visual inspection of the pylorus as guided by the lessons learned from inspection of the bladder in women He refers in particular to the danger of pushing in the wall with the tip of the instrument to form an artificial diverticulum, and how to avoid this.

Autogenous Vaccines in Urology.—Adler-Racz has made a systematic study of vaccine therapy as applied in thirty cases, and emphasizes its great value in chronic pyelitis to ward off irreparable lesions. With gonococcal infection of the upper urinary passages, the vaccine clears this region of gonococci, but a complete clinical cure can be expected only if reinfection from the genitals can be warded off, and if the local changes are not too far advanced. In acute postgonorrheal infections, the vaccine rendered good service, but in chronic cases it had little action, as also when obstruction maintained the source of infection The colon bacillus and the enterococcus were especially amenable to the vaccine therapy. Three women with acute gonococcal and mixed infection of the upper urinary passages were cured with the vaccine alone, it induced severe general and focal reactions (kidney colics), but the urine was freed from pus and bacteria The lesions are more apt to be irreparable in the male, even when the gonococcus is banished by the vaccine.

Zentralblatt für innere Medizin, Leipzig

47: 497 528 (May 29) 1926

*Abdominal Purpura Rehberg —p 498
Hypertension and Extract from Gonads E Kylin —p 501.

Abdominal Purpura.—Rehberg's patient had had at puberty attacks of typical abdominal purpura: colics, melena, hematemesis, tenderness of the colon, swollen joints, purpura, and albuminuria At that time he had cutaneous hemorrhages, and the condition relapsed four times. When the patient was 40 years old, the gastro-intestinal hemorrhages returned The diagnosis was difficult because of the absence of skin hemorrhages The blood platelets were not much diminished, but were fragile. The patient recovered after treatment with fresh vegetables and fruits, administration of calcium and injections of horse serum The condition is rare in adults.

Klinicheskaya Meditsina, Moscow

4: 1 10 (Jan) 1926 Partial Index

Treatment of Psychoneuroses. Y. Karnabikh —p. 1.
*Modified Technic for Percussion. Y. Shwartsman —p. 15.
Apparatus for Capillary Blood Pressure. A Nesteroff —p. 18.
*Cysts of Cowper's Glands G Baradulin —p 26

Modified Technic for Percussion: Its Physical and Psychic Bases.—Shwartsman gives an illustration of his method of percussion for defining the dimensions of the heart: The wrist of the right hand, in dorsal flexion, is held firm on the chest, while the fingers, slightly bent, are fixed in the metacarpophalangeal joint. Percussion is done with the palmar surface of the ungual phalanx of the index. The blows should be stronger when the left border of the heart is explored The percussion starts from the lung, whence it is continued to the aorta and heart. The sternum and ribs do not sound under this percussion; thus, the sounds on the cardiac area can be easily differentiated from those on the lungs Psychologically, the muscular tension requires concentration of attention; consequently, the striking force is kept uniform during the percussion. The limits of the heart, as shown in different diseases with this technic, were identical with those indicated by the orthodiagraphic method.

Cysts of Cowper's Glands.—Baradulin found eight cases of cyst in a Cowper's gland among forty patients with chronic gonorrhea. In cases in which the gonorrheal affection of the gland persists, the excretory duct may become obstructed and then the cyst develops Milky discharge, difficult micturition and pain in the perineum are the symptoms of the cyst. The diagnosis can be established only by means of the urethroscope. In treatment, after the urethroscope is introduced, the cyst is incised; and a 1 or 2 per cent silver nitrate solution is injected. Good results are obtained from electrolysis. A thin bougie is introduced into the cyst, and connected with the positive electrode. A current from 5 to 10 ma is applied for ten or fifteen minutes, the exposure repeated once or twice at one or two weeks' intervals.

4: 41 80 (Feb) 1926 Partial Index

Human Organism from Biologic Standpoint V. Karpoff —p 41.
Clinical Significance of Colloids A Solovtsova —p 49.
*Influence of Calcium on the Heart N Kevdin —p 55.
*Biologic Action of Electric Currents E Zalkindson —p 56
Pathogenesis of Umbilical Fistulas G Rikhter —p 63
Roentgenology of the Pathology of the Diaphragm O Den —p 66

Action of Calcium on the Heart.—Kevdin's experience includes 200 intravenous injections of 10 cc of a 10 per cent solution of calcium chloride. The research was conducted on persons in healthy or pathologic conditions. The rhythm of cardiac contractions became slower, the pulse wave increased, as also the systolic pressure, while the diastolic dropped. Calcium seemed to be of help in acute insufficiency of the heart, when associated with strophanthin or digitalis. It may be especially indicated in chloroform poisoning In chronic heart insufficiency, calcium is a useful adjuvant of digitalis. Good results were obtained in purely functional disease of the heart, from disorders of the vegetative system The treatment here is evidently only symptomatic. Intravenous injections of calcium act on the heart functioning for no longer than fifteen or twenty minutes. Therefore, the continued use of the drug by the mouth is preferred

Biologic Action of Sinusoidal, Faradic and Constant Currents.—Zalkindson made fifty experiments on the isolated ears of rabbits The sinusoidal and faradic current seemed to induce a reflex constriction of the vessels, by way of the peripheral sympathetic system The vasoconstriction from constant currents is due to a direct action on the vessel walls.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 2065 2180 (May 22) 1926

Interstitial Growth of Bone Tissue W M de Vries —p. 2066
Jaundice from Protracted Use of Cinchophen. Klinkert —p 2080.
*Procaine Injection in Treatment of Sciatica Adels —p 2082
*Malaria Treatment of General Paralysis J. de Jongh —p 2083.
Tertian Malaria with Long Latent Period. Kollewijn —p. 2084

Injection Treatment of Sciatica.—Adels reports complete success in his thirteen cases of rebellious sciatica. There has been no recurrence since, the intervals up to ten years. He introduces the 10 cm. needle, the patient prone, to reach the sciatic nerve. Then he injects about 2 cc. of a weak procaine-epinephrine solution, and repeats in a week, and again two weeks later. The nerve is generally tender, which helps to locate it.

Malaria Treatment of General Paralysis.—De Jongh analyzes ten cases, eight in his own service, in which malaria treatment was applied. No appreciable benefit was realized in eight cases, but in the other two the improvement amounted practically to a cure. Such experiences even in only 20 per cent justify wide adoption of the method, he adds.

1: 2217-2320 (May 29) 1926

*Negative Pressure at Lumbar Puncture. E. Janzen.—p. 2218.
*Otolith Reflexes in Man. P. de Haan.—p. 2227.
Care of Umbilical Cord. G. F. Wesenhagen.—p. 2236.
*Vaccine Therapy of Bronchial Asthma. A. Pondman.—p. 2237.

The Preliminary Negative Pressure with Lumbar Puncture.—Janzen uses a three-way cock, long tube, and U manometer for lumbar puncture, allowing very accurate readings with no loss of the fluid. As the needle reaches the dura and pushes it in, this lowers the pressure in the space, and the manometer records a negative change until the needle pierces the dura and the fluid begins to flow out. The more elastic the dura, or the blunter the needle, the greater the negative pressure. In puncturing the cisterna, the pushing in of the dura and the negative pressure might have serious results. It is better, therefore, in making the puncture to use a sharp needle.

Otolith Reflexes.—De Haan describes tests on normal subjects, blindfolded, which show that as the surface on which they are standing is tilted, the head and the muscles spontaneously correct the effect of the tilting, so that the vertical position is maintained. In deaf-mutes, however, this reflex adaptability is lacking. When the surface was even slightly tilted, they fell, every time, as if they were wooden images. There seemed to be an entire lack of any sense of position in space with passive changes.

Vaccine Treatment of Asthma.—Pondman reports on the outcome of vaccine treatment applied systematically, by orders of a sickness insurance company, to policyholders with asthma. No special micro-organisms were discovered in examination of sputum, and no particular vaccine displayed special efficacy. It seems to act as a kind of protein treatment, and strict individualization is not necessary. About 400 asthma patients asked for the treatment; the best results were obtained in the young and well nourished. Complications seemed to annul the possible benefit. Only seven of fifty-seven with asthma from early childhood are still free from recurrence two years later, but fourteen are much improved, and twenty-five are somewhat improved. The corresponding figures in the group of forty-five with asthma acquired after an infectious disease or fall into water, are two cured, twelve much improved and twenty-two somewhat improved. The work was done by the state serologic institute at Utrecht, and the company has now abandoned the treatment.

Acta Medica Scandinavica, Stockholm

63: 425 588 (May 27) 1926

*The Kidneys in Diabetic Coma. L. Salomonsen and M. Harboe.—p. 425.
*Epinephrine by the Mouth. A. Brems.—p. 431.
*Blood Sugar. S. Jonsell et al.—p. 446.
*Metabolism in Pernicious Anemia. G. Becker.—p. 478.
Treatment of Diphtheria. H. Heckscher.—p. 522.
*Kidney Insufficiency. W. Kerppola.—p. 558.
Blisters on Mucous Membranes. K. Lunding.—p. 570.
Thyrotoxicosis and the Action of Iodine on It. J. Wahlberg. Supplement XIV.—pp. 1-148.
Function of Lung Expanded After Discontinuing the Artificial Pneumothorax. A. F. Lindblom. Supplement XV.—pp. 1-142.

The Kidneys in Coma.—Salomonsen and Harboe admit the possibility of diabetic coma without ketonemia. Insufficiency of the kidneys in coma may prevent the excretion of diacetic acid in spite of ketonemia. They noted in one of their patients a remarkable parallelism between the glycemia and retention of residual nitrogen. They believe that hyperglycemia may cause insufficiency of the kidneys.

Epinephrine by the Mouth.—Brems administered 8 cc. of a 0.05 per cent solution of epinephrine by the mouth. The subjects reacted with a hyperglycemia which reached its maximum in about one hour. He confirms the frequent occurrence of epigastric pains due to the drug.

Blood Sugar.—Jonsell, Jorpes and Sikström made a comparative study of the Schaffer-Hartmann and Hagedorn-Jensen methods. The former gives too high values, especially with low amounts of blood sugar. This explains the discrepancies in the reports on insulin intoxication (0.045 per cent with the former, 0.030 per cent with the latter method). They recommend the Hagedorn-Jensen method, and give some technical suggestions.

Metabolism in Pernicious Anemia.—Becker investigated the nitrogen metabolism in eight patients with pernicious anemia. He usually found a positive balance. The basal metabolism was above normal; the respiratory quotient was high. The blood chlorides were low, calcium normal, potassium frequently high. This may be due to destruction of erythrocytes.

Kidney Insufficiency.—Kerppola injected 1 mg. of epinephrine in nephritis patients. He had no therapeutic results in ten patients with edema of from one to three weeks' duration. Contrary to this, the albuminuria disappeared and the blood pressure dropped the next day in three patients who had postscarlatinal nephritis with a duration of from one to four days.

Norsk Magazin for Lægevidenskaben, Oslo

87: 425-528 (June) 1926

*Roentgenotherapy of Brain Tumors. Sæthre and Jørgensen.—p. 425.
*Tumor from Fibroid Myositis. G. Guldberg.—p. 459.
Gangrenous Zoster Involving Spinal Ganglia. J. Arnesen.—p. 465.
*Primary Cancer of the Scrotum. F. G. Gade.—p. 468.
*The Leukocytes in Pernicious Anemia. P. F. Holst.—p. 471.
*Protein Therapy in the Healthy. Axel Øwre.—p. 484.

Roentgen-Ray Treatment of Brain Tumors.—Sæthre and Jørgensen analyze eleven cases of intracranial tumors, with improvement under roentgen-ray exposures in all but two. It amounted to a clinical cure in six, even in one case in which no decompressive operation had preceded the roentgenotherapy. The shadow of the tumor has disappeared, but right vision is still defective. The tumor in this case was in the frontal region in a woman, aged 39. In one young man, epileptic seizures subsided after subtemporal decompressive trephining but the symptoms returned eighteen months later, with choked disk. Under seven courses of from two to three roentgen-ray exposures in the course of two years, the recovery has been complete during the nearly two years since. The taste and smell paresthesias suggested that the tumor was in the uncinate convolution. They insist that preliminary trephining is indispensable, not only as an aid in treatment, but as a safety valve for the increase in intracranial pressure which is almost inevitable at each exposure. The cases are illustrated; the intervals since the treatment in the nine cured or improved patients have been from nine to twenty-four months. There were no pituitary tumors in this series.

Myositis.—The fibrous myositis of the pectoralis major deceptively simulated a cancer in the breast. The microscope after removal of the breast failed to show the slightest sign of a malignant tendency. The tumor was in the muscle itself, and the mammary tissue was only adherent.

Primary Cancer of the Scrotum.—In the case described, no occupational factor could be discovered.

The Leukocytes in Pernicious Anemia.—Holst discusses the effect on the leukocytes from parenteral protein treatment (milk) in fifteen cases of pernicious anemia.

Parenteral Protein Therapy in the Healthy.—Øwre tabulates the changes observed in the blood after intramuscular injection of 5 cc. of milk in six healthy young adults. The temperature rose slightly in all, reaching 39.4 C. in one, and the leukocytes increased two or threefold, the rod-shaped nucleus forms up to fourfold.

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THE ANALYSIS OF SPINAL FLUID TESTS *

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At the risk of being elementary and pedantic, I wish to emphasize certain fundamental principles in diagnosis wherein the examination of the cerebrospinal fluid is of importance. The excuse for such a summary is to be found on every hand, from the query of a writer in a recent number of THE JOURNAL, who wishes an answer as to when lumbar puncture is indicated, to the case in which you and I have obtained unusual findings which we cannot easily interpret. Nor do the textbooks on fluid diagnosis always clarify the situation, for, on turning to the description of the fluid in brain tumor, we read: "In tumors of the brain, the amount of cerebrospinal fluid may or may not be increased. . . . The cells are usually increased. . . . The globulin as a rule is not increased but may be slightly increased. . . . The Lange test may show changes." True, but not very helpful; in fact, rather bewildering.

The diagnostician wishes help; he would like dependable facts as nearly pathognomonic as possible, and he is annoyed and disheartened to find that a luetic zone colloidal gold reaction or lymphocytosis does not necessarily signify syphilis. He is accustomed to accepting the biopsy criterion of malignancy or the report of Klebs-Loeffler or tubercle bacilli as facts on which he may rely, but the spinal fluid reports he finds elusive; the abnormalities are not pathognomonic; they require study and, before their full value is apparent, they must be interpreted in connection with the clinical features of the given case.

From discussions with physicians, from the literature, from reports on cases and from my own experience, I am of the opinion that spinal fluid findings often do not yield as much value as is possible; that at times the chief significance of the fluid tests is missed, and that occasionally misinterpretation leads to wholly erroneous conclusions.

If this is true, where lies the fault? Occasionally, inadequacy of laboratory facilities is a fair excuse for an insufficient number of tests, but a far greater fault lies in the analysis of the recognized tests, an analysis which must be made not in the laboratory but by the physician who knows the individual from whom the fluid was obtained. My belief further is that too many persons are concerned with the fluid. A system by which one physician advises lumbar puncture, an assistant in the syphilis department makes the puncture, two laboratories examine the fluid and the neurologist is then called in to express an opinion on the combined findings, is not conducive to thorough or accurate analysis. In short, my thesis is this: An adequate number of tests carried out so far as possible by the physician who knows the clinical story, who himself performs the puncture, and who himself analyzes the findings will yield a maximum of information.

The whole subject of cerebrospinal fluid, so far as its employment in diagnosis is concerned, dates back only three decades. Its general use may be considered as of less than two decades. During this time, one test after another has been advocated, until now an array of examinations appears in textbooks on the subject, some of them requiring refinement of apparatus and ability of interpretation that are staggering to the clinician. A number of tests have been put forward as pathognomonic for certain diseases (the colloidal gold reaction is a good example), but routine use has forced on us the fact that such a simple type of interpretation is usually a delusion, and that the only safe rule is an intelligent correlation of tests.

With a view to simplification of the subject, the tests that in my opinion yield information of greatest value should be enumerated. Not all of these need be employed in every case, but in every diagnostic lumbar puncture one should be prepared to use any or all as indicated. They are:

1. Initial pressure and pressure studies, the latter chiefly to determine presence or absence of block.
2. Naked eye study for color, turbidity, clotting and presence of blood, the amount being compared in three successive tubes.
3. The total number and differential count of cells.
4. A general protein precipitant, such as trichloracetic acid or alcohol and, if practicable, a quantitative determination as with sulphosalicylic acid.
5. The globulin ring test with saturated ammonium sulphate, which is highly satisfactory.
6. The Wassermann test.
7. Gold chloride test of Lange or benzoin test of Guillain.
8. Direct smears and cultures of bacteria and, rarely, inoculation.
9. Quantitative sugar and chlorides and nonprotein nitrogen.

It will be seen that the list includes tests which may be grouped under the following headings: physical, chemical, histologic, biologic and bacteriologic, and at first glance may be considered a rather formidable array. Experience shows, however, that a keen analysis of the first six will give by far the most information and it will be noted that of these six, all except the Wassermann test may be carried out by any physician who has the ability to perform a lumbar puncture. Colloidal tests, quantitative chemical studies and bacteri-

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* Chairman's address, read before the Section on Nervous and Mental Diseases at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

ologic technic play a real part in thorough analysis of an appropriate case, but I maintain that without them a very good conception of most cases can be obtained. There is no question in my mind that the simplest tests, carried out and analyzed by the individual performing the puncture who also knows the patient, are of the greatest value.

REPORT OF CASES

In order to bring out the point I would make, namely, that the test should be adjusted to the individual case and that analysis should be with the physician who knows the clinical aspects, brief reference to the following situations will be helpful:

Case 1.—A patient presenting ataxic paraplegia was referred to me for treatment of neurosyphilis. It was stated that there was a history of syphilis and that the fluid showed a positive globulin reaction, although cells were absent and the Wassermann reaction was negative, as was also the blood Wassermann test.

On inquiring, it was learned that no pressure studies had been made. Lumbar puncture was therefore repeated and a block demonstrated by jugular compression. The total protein was found high, much higher than the globulin test alone suggested. By adding the appropriate tests, we were able to make a definite diagnosis of cord compression, and laminectomy revealed a nonsyphilitic tumor.

The following case represents erroneous conclusions based on hasty judgment, my own mistake throughout. It exhibits the necessity of extreme care as to details:

Case 2.—In a patient presenting an atrophic paraplegia with diminution of sensation below the second lumbar segment, although the tendon reflexes of the lower extremities were absent, a bilateral Babinski reflex was repeatedly present. Lumbar puncture yielded a deep yellow fluid, which clotted *en masse*, making a diagnosis of spinal tumor evident. But the location of the tumor was not so certain, as some signs pointed to the lumbar cord and some to the cauda equina. It was decided to puncture again between the two possible situations, i. e., between the first lumbar and the twelfth thoracic vertebrae, and if the fluid proved the same as previously obtained from between the fourth and fifth lumbar vertebrae, operation would be directed to the spinal cord localization.

With the patient under ether, ready for laminectomy, this was done, and a yellow fluid obtained. Operation was consequently misdirected to an exposure of the lumbar cord, the tumor being subsequently found attached to a nerve root of the cauda.

The error was twofold: dynamic studies for block were not carried out, and a difference in depth of yellow in the two fluids was not noted until later. More striking still, the protein content of the fluid below the tumor was 2,187 mg. per hundred cubic centimeters, and that above, 720. The fluids were similar but not the same.

Needless to say, at that time (1921), we did not have lipiodol, and the presence of xanthochromia above tumors of the cauda was not recognized.

The following case is most instructive:

Case 3.—A young woman was referred to the Massachusetts General Hospital for treatment of neurosyphilis, because the process was progressive in spite of seemingly adequate treatment. The condition was essentially an ataxic paraplegia.

Our spinal fluid tests showed typical findings of neurosyphilis, but the Queckenstedt test was positive. Believing that we dealt with a localized syphilitic meningitis, we persevered with more antisyphilitic medication. With the patient's increasing disability, operation was finally decided on with the expectation of finding a gumma. Instead, a nonsyphilitic meningioma was enucleated, with marked clinical improvement.

The subsequent fluid findings are of interest, because on two occasions the lumbar fluid, now showing no evidence of subarachnoid block, exhibited more intense syphilitic reactions than before the removal of the tumor. This, together with the fact that the cisternal fluid before operation gave more cells than the lumbar, strongly suggests that the patient was the subject of latent cerebral syphilis plus cord tumor.

If we had not carried out dynamic studies in this case obstruction in the spinal fluid pathway would have been overlooked and much more valuable time would have been wasted in pursuing an attack on the syphilitic process which, while undoubtedly present, was obviously not the cause of the immediate symptoms.

The following is a case of a different type, in which correct interpretation of fluid findings was a valuable aid to therapy:

Case 4.—A man, aged 32, had been operated on with a simple mastoid operation (right). Because of persistent fever and development of meningeal symptoms, he was referred to Dr. Harold Walker. It was noted that he had stiff neck, a positive Kernig sign and weakness of the right external ocular muscle; he was mentally clear. Spinal fluid findings showed a purulent fluid under a pressure of 350 mm. Dynamic studies were of particular interest, for on compression of the right internal jugular vein almost no rise in pressure was obtained, while compression of the left jugular caused a prompt and considerable rise in pressure. The protein was 196 mg. per hundred cubic centimeters, and the sugar, 0.031. Bacteria could not be demonstrated in film or culture.

These tests indicated a well marked meningeal irritation but not necessarily a bacterial meningitis, as shown by the persistent sugar and by the fact that bacteria could not be demonstrated. Right lateral sinus thrombosis was suggested by the dynamic studies. Operation was therefore directed to the uncovering of the sinus which appeared intact, although showing epidural granulations. The internal jugular vein was ligated. On three subsequent occasions within the next week purulent fluid was obtained but was always bacteria free and showed a rising sugar content. Later, because of intermittent fever and chills, a further examination of the sinus was made, when a large mural thrombus was found. Convalescence was soon established, and the fluid two weeks after the last operation showed only the remnants of the old meningeal irritation.

The spinal fluid examination here showed evidence of sinus thrombosis before it was clinically apparent. Also the fluid, while indicative of profound meningeal irritation, was always compatible with aseptic meningitis. Had we not heeded the fluid findings we might reasonably, as was more than once suggested, have investigated the brain for abscess, in which case a fatal meningitis would almost certainly have resulted.

The foregoing brief protocols demonstrate, I believe, the necessity of intellectual effort in interpreting the fluid tests. In no one of these cases, and these are only a few of similar problems, could the tests have been adequately interpreted in the laboratory alone.

Hardly less important than positive findings which help in diagnosis are negative findings in cases in which positive findings are expected. I remember years ago a patient who presented a typical clinical picture of tuberculous meningitis in whom the fluid was entirely negative. When she died shortly afterward, the postmortem examination showed the cause of her cranial nerve paralyses to be due to multiple myeloma of the skull, affecting the cranial nerves outside the dura. It is unreasonable to believe that tuberculous meningitis can occur without giving a pathologic fluid.

In cord tumor in which spinal cord compression exists, it has been my experience that the fluid is always pathologic. A normal spinal fluid, especially normal dynamic studies and normal protein, render the diagnosis of cord compression most unlikely. While negative tests are frequently encountered in neurosyphilis, they are found especially in the late degenerative stage of the disease. With few exceptions, negative tests are incompatible with active advancing neurosyphilis.

That we should be careful not to make our tests agree with clinical preconceptions is illustrated by the following case:

Case 5.—A man, aged 51, presented a picture which to his physician was that of an early general paralysis. This diagnosis was supported by the fact that a positive blood Wassermann reaction was obtained. I was asked to see him to corroborate the diagnosis, and as part of this examination made a lumbar puncture. The fluid was under slightly increased pressure (310 mm.), was slightly orange, and showed, microscopically, red corpuscles in various stages of degeneration and 131 white corpuscles, equally divided between polymorphonuclear leukocytes, large mononuclear cells and lymphocytes. The Wassermann reaction was negative. The colloidal gold reaction was 0000000000.

Further history elicited the fact that the patient's mental confusion was of sudden occurrence ten days previously, and examination showed that the mental picture was really an aphasia. Right lateral homonymous hemianopia was another finding, which finally turned the diagnosis from general paralysis to cerebral hemorrhage, a condition of quite different prognostic and therapeutic significance.

SUMMARY

I have endeavored to bring out two points: 1. Analysis of all significant data is a necessity, if full value is to be obtained from spinal fluid test. 2. The simpler tests of known worth, if properly analyzed and correlated with the clinical picture of the individual patient, will give the most information.

475 Commonwealth Avenue.

THE TREATMENT OF PERIPHERAL VASCULAR DISTURBANCES OF THE EXTREMITIES *

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[Editorial Note.—This paper, together with the paper by Dr. Miller, which follows it, concludes the symposium on "Cardiovascular Hypertensive Disease and Its Treatment." The last issue of The Journal contained the papers by Dr. Major, Dr. Robinson and Drs. James, Laughton and Macallum.]

There are two main types of vascular disturbances affecting the extremities, which are classifiable on the basis of their functional or organic origin (table 1). The functional or vasomotor disturbances fall in two clinical groups, as the vasomotor mechanism is capable of only two responses, vasoconstriction and vasodilatation. When the vasomotor balance is so adjusted as to fulfil just the local circulatory requirements, the function of the mechanism is normal. When the vasomotor balance of the limb is preponderantly toward the vasoconstrictor side and the blood flow is diminished, the surface temperature is reduced and the limb is frequently pale or cyanotic. The degree of coldness and of pallor or cyanosis of the extremity depends on the amount or degree of vasoconstriction. When vasoconstriction occurs in attacks in the hands or feet with well defined local color changes, subjective symptoms and, frequently, trophic disturbances, the condition is recognized as Raynaud's disease. Milder vasospastic disturbances are designated as dead finger, or white finger, acrocyanosis or acro-asphyxia. The condition characterized by intermittent attacks of undue vasodilatation of a peripheral vascular segment with redness and subjective symptoms of heat is known as erythromelalgia. There are probably two types of erythromelalgia; a primary or essential form, existing in the absence of any demonstrable organic vascular disease, and a secondary form, appearing in association with arteriosclerosis. The latter group may lack the objective evidence of increased vasodilatation but, subjectively, intermittent attacks of a burning sensation in the extremities are noted by the patient. The symptoms have more the features of paresthesia than disturbance in the blood flow.

The organic or obliterative lesions involving the extremities are mainly of two types: thrombo-angiitis obliterans, or Buerger's disease, and endarteritis obliterans, or arteriosclerosis with or without superimposed thrombosis. The so-called diabetic gangrene has a similar arteriosclerotic basis. Thrombo-angiitis obliterans is a chronic thrombosing process, usually involving the peripheral arteries and veins. The early pathologic picture shows a soft red clot filling the vascular lumen, and containing erythrocytes and fibrin. There are subsequent stages of fibroblastic organization and canalization. Aside from a diffuse cellular infiltration of the arterial coats, suggesting an infectious basis, there is no evidence of any of the changes involving the intima or media that characterize endarteritis obliterans. Buerger[1] was the first to point out this essential difference in the two diseases. In arteriosclerosis of the peripheral vessels, the lumen is gradually narrowed by the proliferation of the intima. Degeneration of the muscle fibers and the deposition of calcium are the usual sequence of events. The superimposition of a simple thrombus usually precedes the advent of gangrene. The cellular nature of the clot so characteristic of that observed in thrombo-angiitis obliterans is lacking. The process is degenerative and lacks the evidence of an infectious basis seen in thrombo-angiitis obliterans.

REQUISITES OF THERAPY IN THE VASOMOTOR DISTURBANCES

It is evident that treatment will vary in the vasomotor and organic types of case. In the vasomotor disturbances dependent on vasoconstriction, treatment is considered from the medical and surgical standpoints. The medical measures consist in protection from cold, which in the mild cases is usually sufficient. Frequently, change of climate is indicated. If psychic disturbances are aggravating the condition, readjustment is attempted. There is no medical treatment that prevents or relieves vascular spasm, and the results of such therapy have been uniformly disappointing.

The relief from vascular spasm of the extremities by measures which would destroy, or cause interference in, the vasomotor paths has been a surgical goal long sought. The so-called stripping operation, as carried out by Jaboulay[2] and Leriche,[3] has been performed by many surgeons in a heterogeneous group of cases of a vascular and neurogenic nature. Sistrunk[4] has carried out this type of operation in a series of cases of vascular disease. In theory, this operation would be indicated

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* From the Division of Medicine, Mayo Clinic and the Mayo Foundation.

* Read before the Section on Pharmacology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[1] Buerger, Leo: The Circulatory Disturbances of the Extremities, Including Gangrene, Vasomotor and Trophic Disorders, Philadelphia, W. B. Saunders Company, 1924.

[2] Jaboulay, quoted by Leriche, footnote 3.

[3] Leriche, Réné: De la sympathectomie peri-artérielle et de ses résultats, *Presse méd.* **25:** 513 (Sept. 10) 1917.

[4] Sistrunk, W. E.: Personal communication to the author.

in the vasomotor disturbances dependent on vasoconstriction, such as Raynaud's disease. However, the results of this procedure have not been entirely satisfactory, and the investigation on the course and distribution of the vasomotor fibers to the vessels of the extremities provides an adequate explanation for its failure. It has been shown that the vasomotor fibers do not enter the artery at this point of origin but at successively lower levels. Thus, only a small portion of the fibers could be destroyed by the removal of a small segment of the adventitial layer of the artery. During the last year it was observed that, following the removal of the second, third and fourth lumbar ganglions by Adson [5] in cases of spastic paraplegia, striking vasodilatation occurred in the feet. This was shown by the increased rate of heat elimination, as determined by the foot calorimeter and the increased surface temperature of the feet. The vasodilatation was shown to be uniform and uninterrupted for the period of observation (from two to six weeks), and its presence was confirmed by clinical findings; the feet became dry and hot, and sweating was absent. Because of these observations, it was felt that a similar procedure carried out in Raynaud's disease affecting the feet should theoretically relieve the vascular spasm and produce cure.

Table 1.—*Tentative Clinical Classification of Arterial Vascular Diseases* *

Functional or Vasomotor types	Local distribution	Vasoconstricting types	1. Multiple-phase color reaction; Raynaud's disease 2. One-phase color reaction; acrocyanosis, dead finger, local syncope
		Vasodilating types	Erythromelalgia
	General distribution	Vasoconstricting types	Primary or essential hypertension, early stages
		Vasodilating types	Primary or essential hypotension
Organic types	Local distribution		1. Arteriosclerosis, endarteritis obliterans, with or without thrombosis; diabetic gangrene 2. Thrombo-angiitis obliterans 3. Simple thrombosis or embolism 4. Arteritis of known infectious origin (rheumatic, syphilitic) 5. Aneurysm with or without thrombosis
	General distribution		Arteriosclerosis 1. Primary 2. Secondary to hypertension

* In our experience, this classification will cover practically all the usual forms of arterial vascular disease.

SURGICAL TREATMENT OF RAYNAUD'S DISEASE

To date, three patients with Raynaud's disease affecting the lower extremities have been operated on by Adson; he removed the second, third and fourth lumbar ganglions and the sympathetic trunk, and, in addition, stripped the perivascular tissue from the common iliac arteries to insure complete removal of the vasomotor fibers.[6] The results obtained have been striking, and clinical cure has persisted to date. The feet became hot and progressively drier, and sweating was absent for variable distances above the knee. Subjectively, mild symptoms of burning or hot feet were noted by the patient. Vasomotor responses to cold were diminished or absent in the feet. The pulse of the dorsalis pedis and posterior tibial arteries was full and throbbing. No hyperesthesia or muscular or sciatic tenderness followed the operation. There has been no recurrence of the symptoms of the disease in these patients to date. The longest postoperative period has been one year. For relief of Raynaud's disease of the upper extremities, removal of the inferior cervical ganglions would be necessary. This has been done by Adson in one case, and demonstrable increases in surface temperature of the corresponding hand was noted after operation. Further work in this connection will be necessary before positive statements can be made.

The special calorimetric studies undertaken with the foot calorimeter showed increases in the amount of heat given off from the feet, varying from 15 to 200 per cent, calculated as the number of small calories given off for each minute for each square inch of surface area of foot. The increase in surface temperature of the feet was between 0.7 and 13.8 C., following operation (table 2).

ERYTHROMELALGIA

The treatment of erythromelalgia has been quite disappointing, both medically and surgically. In one patient, perivascular stripping was carried out by Sistrunk for possible relief of symptoms, but it was without effect. In the secondary form of erythromelalgia with paresthesia of a burning nature, acetylsalicylic acid or cinchophen will usually give temporary relief.

ORGANIC VASCULAR DISEASE

The treatment of the organic or obliterative disease affecting the extremities has three possible objects: (1) prophylaxis, (2) relief of pain and (3) increase in the peripheral circulation.

Medical Measures.—Prophylactic measures are of great importance in preventing or delaying the onset of gangrene. For variable periods of time, with the blood supply diminished, the margin of safety for the extremity is narrow. Slight degrees of trauma and skin infections may produce disastrous sequelae. The diabetic patient with endarteritic lesions of the feet demands special consideration, as emphasized by Joslin [7] and others. Similar preventive measures are necessary in cases of thrombo-angiitis obliterans, and their importance to the patient cannot be overemphasized. While proof is lacking that tobacco is the etiologic agent in thrombo-angiitis obliterans, there is some reason to believe that as a vascular toxin it contributes to the disease, and complete abstinence or marked restriction

Table 2.—*Skin Temperature in Raynaud's Disease Before and After Operation*

Date, 1925	Right		Left		Pulse	Mouth Temperature	Room Temperature	Comment
	First Toe	Dorsal Surface	First Toe	Dorsal Surface				
10/29	25.0 25.0	28.2 28.1	24.1 24.1	27.8 27.7	.. 90	... 37.0	.... 22.7	Feet cold, swollen and moist
11/ 5	....	....	22.2 22.1	24.8 24.7	68	36.6	22.3	Feet cold, swollen and moist
11/ 7	....	....	....	....	..	....	....	Lumbar ganglionectomy
11/14	34.7 34.5	31.8 31.4	35.3 35.0	....	90	37.4	22.0	Feet warm, dry and pink; scaly
11/21	35.3 35.3	34.7 34.8	34.2 34.2	34.5 34.5	74	37.2	22.0	Feet warm, dry and pink
1926 1/19	36.1 36.3	35.5 35.6	36.4 36.6	35.7 35.8	80	36.6	23.0	Feet warm, dry and pink; less scaly

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[5] Brown, G. E., and Adson, A. W.: Calorimetric Studies of the Extremities Following Lumbar Sympathectomy, Am. J. M. Sc. **170**: 232-240 (Aug.) 1925.

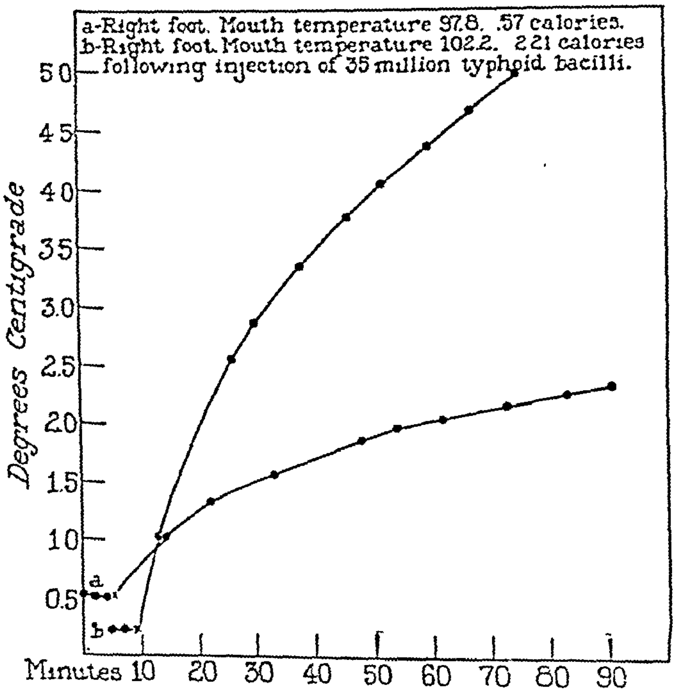
[6] Adson, A. W., and Brown, G. E.: Treatment of Raynaud's Disease by Lumbar Ramisection and Ganglionectomy, and Perivascular Sympathetic Neurectomy of the Common Iliacs, J. A. M. A. **84**: 1908-1910 (June 20) 1925.

[7] Joslin, E. P.: The Treatment of Diabetes Mellitus, with Observations Upon the Disease Based on Thirteen Hundred Cases, ed. 2, Philadelphia, Lea and Febiger, 1917.

of its use is indicated. A systematic search for foci of infection is carried out as a routine, and infection in the teeth, tonsils and prostate are eliminated because of the pathologic evidence of the infectious nature of the disease. The relief of pain in thrombo-angiitis obliterans is frequently the major consideration. The pain varies in the different stages, and is almost pathognomonic of the progression of the lesion. The early stages are characterized by claudication associated with pain in the foot and calf, intermittent in character, and brought on by exercise and relieved by rest. Later, with the onset of trophic lesions or gangrene, pain becomes excessive and continuous, breaking down the patient's morale, and reducing him to a pitiable wreck. One often observes such a victim, squatting tailor fashion, holding the diseased foot in his hands, moving it up and down, and continuously rubbing it. Brief snatches of sleep constitute his quota of rest. Relief from this type of pain has been almost unattainable. Opiates are without avail and are attended by great danger because of the possibility of habit formation. Intravenous injection of a 2 per cent solution of sodium citrate has, in our experience, not been satisfactory. Less than 10 per cent of the patients had relief from pain, and that was only transitory. No increase in the local circulation has been demonstrated with calorimetric methods following the administration of citrate. Intravenous injections of radium chloride, in doses of from 25 to 75 micrograms, has given relief from pain for maximal periods of seven days in 50 per cent of a series of fifteen cases. No increase in blood flow could be demonstrated to explain its analgesic action. The chief objection to the use of radium is its almost prohibitive cost. Irradiation of the sacral area by deep roentgen-ray therapy has been advised by Philips and Tunick[8] for the relief of pain. In four cases in which this was done, transitory relief followed in two instances. In our experience, the best medical measure for the relief of pain has been the intravenous injection of typhoid vaccine to produce a mild protein shock. About 75 per cent of a series of fifteen cases showed variable degrees of relief from pain for periods of from one to ten days. Injections have been given at intervals of from one to five days in sufficient dosage to produce febrile reactions of from 2 to 3 degrees C. The basis for its action is not entirely clear, but we have been able to demonstrate by accurate calorimetric methods increases in surface temperature and in the rate of heat elimination of the feet, indicating that an increased blood supply may be the important factor, as shown in the accompanying chart.

Physical measures to increase the volume flow of blood to the extremity consist of postural exercises, hot light therapy, and contrast baths for the feet. These measures, when carried out consistently, are productive of great good. Buerger, in his recent book, has described procedures in detail, and their efficacy can be verified in many cases in the pregangrenous and early gangrenous stages of the disease. The healing of amputated limbs can be helped greatly by the prolonged application of mild heat in the form of electric lights. Great care must be taken to prevent burns from the application of heat, as the circulation to the skin in these cases is impaired, and lesser degrees of heat are required to injure this tissue than normally. The use of contrast baths is contraindicated in the presence of gangrene or open lesions, but this measure has great usefulness in the early stage or stage of claudication, and constitutes a form of vascular exercise that produces symptomatic improvement in early cases in both types of organic arterial disease of the extremities. The intravenous injection of foreign proteins to produce mild degrees of systemic fever has been the most efficacious measure for increasing local circulation. This measure alone, and when carried out in combination with physical measures, will facilitate the healing of the stump after low amputation.

Surgical Measures.—Because of the striking results obtained from lumbar sympathetic ganglionectomy in vasomotor disturbances, it was thought justifiable to submit a patient with thrombo-angiitis obliterans to this operation. The basis of this disease is, of course, entirely different, and good results, if any, would rest on different considerations. It was observed in many of these cases that marked vasomotor disturbances of a vasoconstrictor type are superimposed on the organic lesion, and color changes quite similar to those in Raynaud's disease are intermittently present, indicating vasoconstriction. Five patients with thrombo-angiitis obliterans have been operated on to date.[9] Bilateral lumbar sympathetic ganglionectomy with perivascular neurectomy of the common iliac arteries was performed by Adson. These cases represented fairly advanced stages of the disease. The first patient had a large trophic ulcer just proximal to the toes, measuring 4 by 5 cm. The feet were cold, and marked atrophy of the leg muscles was present. The pulses of the vessels of both feet were absent. Pain was excessive and continuous, and had prevented sleep for several weeks. The second patient had a small trophic ulcer on the dorsum of the foot with excessive, continuous pain. The main vessels were closed, and the usual color changes were present. In the third case, there was a beginning ulcer on the tip of the first right toe; the main vessels were obliterated. Claudication with pain in the calf and foot appeared after 300 steps. In the



Increased heat elimination and blood flow in the feet following the intravenous injection of foreign protein in thrombo-angiitis obliterans.

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[8] Philips, H. B., and Tunick, I. S.: Roentgen-Ray Therapy of Thrombo-Angiitis Obliterans: Preliminary Report, J. A. M. A. 84: 1469-1472 (May 16) 1925.

[9] One patient with marked gangrene of the foot died from pneumonia ten days after operation, and tests could not be carried out.

fourth case, amputation had been performed two years previously for gangrene of the right foot. Trophic changes with skin fissure had developed in the left foot, and pain was continuous. Pulsations were absent in the vessels of the foot. The ages of these patients varied from 32 to 45 years. There were no findings by physical or roentgenologic examination of the legs to indicate the presence of arteriosclerosis.

The clinical improvement following the operation was striking. Relief from pain was complete in all the patients and has persisted to date (the first patient was operated on, Dec. 26, 1925). The trophic ulcer in the first case showed healing and granulation within a few days after operation. Healing was complete in ninety days. In the second case, healing of the ulcer was complete in ten days. In the third case, the claudication was relieved but the early lesion on the toe remained tender and red. In the fourth case relief from pain was complete, and there was evidence of increased circulation in the remaining foot. Sciatic tenderness was noted in one instance fourteen days after operation. Sweating disappeared below the knees in all cases.

Calorimetric determinations for the feet revealed a moderate increase in the rate of heat elimination after operation, ranging from 50 to 112 per cent, as measured in small calories given off for each minute for each square inch of foot surface. This increased vasodilatation was also confirmed by careful determinations of the skin temperature before and after operation. Increases of from 1.5 to 6.4 degrees C. in the distal areas of the feet followed operation. The increase in the surface temperature showed considerable variation in the toes; the dilatation was not uniform, as it was in the cases of Raynaud's disease. The duration of the vasodilatation is not known, as the maximal postoperative observation period has been three months. Some diminution was noted in one patient one month after operation. A much greater lapse of time will be necessary before permanent effects of the operation are known (table 3).

Table 3.—*Skin Temperature in Thrombo-Angiitis Obliterans Before and After Operation*

	Left			Right					
Date, 1925	Large Too	Dorsal Surface	Leg	Large Toe	Dorsal Surface	Pulse	Mouth Temperature	Room Temperature	Comment
12/23	28.2 28.2	32.5 32.6	32.2 32.2	27.3 27.3	30.0 30.0	76	97.8	22.0	Left foot cold, pale, ulcer on dorsum, severe pain
12/29	....	....	....	....	....	..	....	....	Lumbar sympathetic neurectomy
1926 1/13	23.7 28.8	34.3 34.5	33.2 33.3	34.2 34.8	33.6 34.0	72	98.6	22.5	Ulcer healed, *left* foot warm to base of toes; right foot appears normal; both dry; no pain since operation

ENDARTERITIS OBLITERANS

Medical Measures.—Medical treatment of this condition is essentially the same as of thrombo-angiitis obliterans. Protective and prophylactic measures are of the utmost importance in the stage of claudication. Gangrene is usually precipitated by an occluding thrombosis, no means of preventing which is known. Pain in endarteritis obliterans is usually not as severe as in thrombo-angiitis obliterans and is more effectively controlled. Injections of radium chloride intravenously give relief in a certain number of cases. The use of electric heat baths must be carefully supervised, as disastrous burns may result. Intravenous injections of foreign protein have given relief from pain in about 50 per cent of our cases. Because of the age and poor general condition of these patients, all therapeutic measures must be carried out cautiously.

Surgical Measures.—In the presence of gangrene, amputation of the limb is advisable and should be carried out after the acute reaction of the vascular thrombosis has subsided. Lumbar sympathetic ganglionectomy has not been performed in this type of case because of the serious operative risk for the patient with arteriosclerosis. Studies of the available vasodilatation in endarteritis obliterans seem to show little or no vasodilatation, and operative measures to block the vasoconstrictor nerve fibers would probably not be followed by increased blood flow in the extremities. Perivascular stripping has been undertaken in a small group of these cases without demonstrable increase in the blood flow. Several surgeons have reported relief from pain in endarteritis obliterans following this operation.

Table 4.—*Comparison of Surface Temperatures During Protein Reaction and Following Lumbar Ganglionectomy*

Case	Disease	Location	Before Treatment	With Typhoid Vaccine	Increase	Following Operation	Increase
1	Raynaud's disease	First toe...	22.1	30.9	8.8	36.3	14.2
		Dorsum....	21.7	31.4	6.7	32.6	10.9
		Leg........	29.4	30.6	1.2	35.3	5.9
2	Thrombo-angiitis obliterans	First toe...	31.1	30.7	...	32.6	1.5
		Plantar surface....	31.6	31.7	0.1	34.0	2.4
		Leg........	31.4	34.3	...	33.8	...
3	Thrombo-angiitis obliterans	First toe...	27.5	31.5	4.0	32.0	0.5
		Dorsum....	29.7	32.0	2.3	32.9	3.2
		Leg........	33.1	35.1	2.0	32.7	...
4	Thrombo-angiitis obliterans	First toe...	28.2	29.7	1.5	29.7	1.5
		Dorsum....	32.6	31.2	...	33.0	0.4
		Leg........	32.2	30.7	...	31.3	2.1
5	Thrombo-angiitis obliterans	First toe...	26.1	30.7	4.6	30.1	4.0
		Dorsum....	30.3	33.4	3.1	32.6	2.3
		Leg........	33.8	34.3	0.5	34.5	0.7

SELECTION OF CASES FOR OPERATION

In order to determine the available or potential vasodilatation in the diseased extremity, a method has been evolved which apparently gives important information. Intravenous injections of a foreign protein (typhoid vaccine) are given in doses sufficient to produce a systemic rise of temperature of from 1 to 2 degrees C. The surface temperature of different areas of the feet is determined by the Sheard thermocouple thermometer, coincidently with the systemic or oral temperature. The change in the surface temperature of the foot gives an index of vasodilatation and increased blood flow. In the cases of Raynaud's disease, increases in the surface temperature of the feet of 14 degrees C. have been noted. In thrombo-angiitis obliterans, the increase is variable in different parts of the feet, and is sometimes absent. Comparative studies of the preoperative surface temperature accompanying fever and the postoperative surface temperature showed a fairly close agreement, and marked vasodilating effects from lumbar ganglionectomy need not be looked for if systemic fever has not effected a vasodilator response (table 4).

COMMENT

Medical treatment of Raynaud's disease and allied vasospastic disturbances has not been successful, and theoretical considerations would indicate a surgical procedure that would produce interference with the vasomotor paths to the extremities. Perivascular stripping, in our hands, was not followed by a demonstrable increase in the blood flow of the extremity. Removal of the second, third and fourth lumbar sympathetic ganglions, and perivascular neurectomy of the common iliac arteries produces this effect in the lower extremities. Probably a permanent vascular dilatation in the feet ensues, with disappearance of the vasoconstricting action. The blood flow is markedly increased, as shown by quantitative studies of the loss of heat and the surface temperature. Trophic ulcers heal rapidly, and signs and symptoms of the disease disappear completely.

The treatment of the chronic organic obliterative diseases of the extremities presents another type of problem, and medical supervision and therapy is of great value in these cases. In thrombo-angiitis obliterans the relief of pain is frequently the paramount consideration, and its relief, for variable periods, can be accomplished in many cases by the intravenous injection of foreign protein or of radium chloride and irradiation of the sacral spine with roentgen rays. In the absence of definite gangrene and when relief from pain is attainable, these patients can be tided over long periods with some hope of circulatory compensation being established. Conservative measures to avoid amputation are necessary, as the disease is bilateral, and double amputation spells economic disaster for these unfortunate men in the active time of life. Early diagnosis is essential. Unfortunately, this disease is not well recognized by physicians generally, as less than 20 per cent of these cases were correctly diagnosed before investigation at the clinic. Valuable time was lost during the period when protective and simple physical measures might have prevented the serious sequelae.

When these patients show beginning trophic disturbances and the usual distressing pain, the operation as performed by Adson seems to offer additional chance of preventing the loss of limbs. With control of pain, amputation can be delayed indefinitely. With the institution of protective and other measures to enhance the circulation of the feet, these patients can acquire a moderate degree of usefulness and activity. The permanence of the vasodilating effects after operation cannot be stated at this time. I am of the opinion that, if amputation is eventually necessary after lumbar ganglionectomy, it will be permissible at lower levels in the presence of the additional vasodilatation. The selection of suitable cases for operation is most essential, and the use of the protein reaction to determine available vasodilatation seems advisable, as a preoperative test. Comparison of the preoperative rise of surface temperature to protein fever with the postoperative values seems to indicate a fairly close parallelism. It would be futile to attempt the radical operative procedure in the absence of any available dilating vessels. Patients with endarteritis obliterans show slight or no vasodilatation, and the age and general condition of these older patients, with frequently generalized degenerative lesions of the heart or kidney, contraindicate an operative procedure of this magnitude.

Epilepsy.—The epileptic fit is nothing else than a symptom; no such disease as epilepsy exists, or can possibly exist; even by resort to such epithets as "essential" or "idiopathic" epilepsy we in no sense add a term of differentiating quality, since the pathological element constituting the disease-component is not thereby expressed. . . . An individual may have one fit only in the course of his life, or a few, at the widest intervals, as in the case of a lady who had an epileptic fit at the age of 14, when her period of reproductive activity commenced, and another at 44, when it closed.—Wilson, S. A. K.: *Brit. M. J.*, July 3, 1926.

THE VISCERAL MANIFESTATIONS OF CARDIOVASCULAR HYPERTENSIVE DISEASE

DIAGNOSIS AND TREATMENT *

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The visceral manifestations of hypertension arise, in a large measure, from the arterial changes that accompany this condition. These changes are secondary to, and apparently the result of, the hypertension, or are perhaps excited by the same agency responsible for the vascular spasm. The renal changes usually observed in advanced hypertension are thought to be secondary to changes in the arterioles of the kidney. Neuroretinitis is not observed in arteriosclerosis without hypertension, nor is it dependent on impaired kidney function alone. It is in some manner associated with hypertension and the accompanying renal changes.[1]

Next to the kidney the heart suffers as a result of increased work, actual changes in the heart muscle playing a very unimportant rôle. Fishberg[2] has recently studied in a comprehensive manner the character and distribution of the arterial changes in seventy-two cases of essential hypertension. Histologically, these changes were similar to those found physiologically in the aged: a thickening of the intima with progressive atrophy of the media. The arterioles of the kidney were involved in 65 per cent of his seventy-two cases; the pancreas, in 50 per cent; the liver, in 30 per cent, and the brain, in 20 per cent. The myocardium was very infrequently involved. This supports the view that cardiac decompensation in hypertension is largely the result of increased load.

The relation of the kidney to hypertension is still a debated question. Nephritis is the one established etiologic factor. It is only necessary to recall the progressive rise in pressure in the acute glomerular nephritis following scarlatina. What actually occurs is still a mystery. Its rather rapid development and frequently transitory character strongly suggest a functional disturbance. It was formerly thought that persistent high blood pressure was always secondary to renal changes. During the early years of hypertension, there is usually no clinical or laboratory evidence of nephritis. If such a patient is followed, very frequently albumin and casts will appear in the urine. Eventually the urinary findings may be characteristic of nephritis. With this there may be some impairment of kidney function, as shown by the phenolsulphonphthalein test or the blood chemical determinations. This group, in which renal changes, if present, appear late in the disease, is now designated as essential hypertension, the appearance of kidney disturbance being considered secondary to the high blood pressure and arterial changes. The vast majority of hypertension patients fall in this group.

With this evidence, we have not necessarily eliminated the kidney as a factor. The term essential hypertension is not explanatory. It is merely a term employed to exclude the kidney as the exciting cause. The mere fact that a kidney responds in a normal manner to our present functional tests does not prove that all the varied products of protein metabolism are being properly eliminated. At present chemical examination of the blood provides fairly accurate quantitative determination of only the urea nitrogen, uric acid, creatinine and total nonprotein nitrogen. The identity of the nitrogen compounds exclusive of those mentioned cannot at present be determined. It is possible that some of the pressor amines, as tyramine or guanidine, may play a rôle in hypertension. Major[3] has suggested that guanidine may play a part. With available methods, he was unable to demonstrate an increase of this substance in the blood of patients with high blood pressure. The advancement of blood chemical determinations may eventually throw light on the subject. Meanwhile, we may speculate that this hypothetic pressor agent may be eliminated with great difficulty through the kidney. With only slight impairment of the kidney not detectable by present methods of examination, it may be retained in the blood. This hypothetic renal disturbance may be slowly progressive, finally reaching a point at which it may be recognized by the clinician. As hypertension develops in acute nephritis, we should be loath to reject the kidney as a possible factor in chronic hypertension.

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* Read before the Section on Pharmacology and Therapeutics at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926

[1] Wagener, H. P., and Keith, N. M.: Cases of Marked Hypertension, Adequate Renal Function and Neuroretinitis, Arch. Int. Med. 34:374 (Sept.) 1924. O'Hare, J. P., and Walker, W. G.: Arteriosclerosis and Hypertension, ibid. 33:343 (March) 1924.

[2] Fishberg, A. M.: Anatomic Findings in Essential Hypertension, Arch. Int. Med. 35:650 (May) 1925.

SIGNS AND SYMPTOMS

It is scarcely necessary to discuss the signs and symptoms arising from hypertension. The cardiac, ocular and cerebral disturbances are familiar to all.

PROGNOSIS

The two most frequent causes of disability or death are cerebral hemorrhage and cardiac decompensation. Termination by uremia is relatively infrequent.

It is impossible to make an accurate prognosis in the ordinary ambulatory hypertensive case. Patients with a systolic pressure of 200 mm. or more may live comfortably for many years. Others with a much lower pressure may acquire a hemiplegia or cardiac decompensation. A great deal depends on the patient's ability and willingness to follow the physician's advice. Obesity or hard manual labor predisposes to cardiac decompensation. The more marked the renal changes, the more grave the prognosis.

During sleep, the blood pressure falls.[4] This raises the question of why cerebral hemorrhage occurs so frequently at night. Recently, McWilliam[5] has studied the effect of dreams on blood pressure. The blood pressure after a person awakens from a disturbing dream may be from 40 to 50 mm. above the normal level. The effect on blood pressure of a nightmare may be greater than that of any experienced during waking hours. This raises the question of bad dreams playing a rôle in the frequent development of hemiplegia during sleep.

Life insurance companies have made a careful study of the effect of increased blood pressure on longevity. As these observations run into the thousands, such tables may be accepted as the best available evidence. On the basis of 100 as the expected death rate, the following figures show the rate in hypertension: The maximum systolic pressure at which a person, aged 20, is accepted without penalty, is 137 mm. The death rate with a pressure of 140 mm. is 120; 150 mm., 145; and 160 mm., 190. The maximum acceptable systolic pressure at 40 years is 144 mm. With a systolic pressure of 150 mm., the death rate is 130; and with 160 mm., 160. The maximum acceptable pressure for 55 years is 150 mm. With a systolic pressure of 155 mm., the rate is 120; with 165 mm., 155; and 175 mm., 200. The accompanying table gives a brief summary of the observations. Here again the expected death rate is 100.

Observations of Hypertension Rates, Using One Hundred As Expected Death Rate

From 10 to 14 mm. above average for age	114
From 15 to 24 mm. above average for age	181
From 25 to 34 mm. above average for age	205
From 35 to 44 mm. above average for age	246
From 45 to 54 mm. above average for age	254

On the other hand, in a group of 627 men, aged from 40 to 60 with systolic pressure of 105 to 110 mm., the mortality was 56 in place of the expected 100. These figures indicate that increased blood pressure deserves serious consideration, as it definitely shortens life.

TREATMENT

Until the causation of hypertension is determined, preventive measures are largely speculative. Excessive eating of meat, intestinal intoxication, focal infections and the strain of modern life have all been mentioned as etiologic factors. Evidence of their relationship, however, is lacking.

The active treatment of hypertension, to say the least, is unsatisfactory. Reported beneficial measures have failed to take cognizance of the extreme variation of blood pressure in untreated patients. When a patient with hypertension tells me that his friends are being cured by some special method of treatment, I urge him to try it, only requesting that he report to me when cured. The results have always been the same—an optimistic patient with unchanged pressure. The innumerable therapeutic errors of the past can be traced largely to failure to consider the hopeful psychology of the sick, and lack of knowledge of the course of untreated disease. In hypertension, fluctuations in blood pressure are so marked and unexpected that before any therapeutic measures are undertaken, the patient should be kept under observation for several weeks with frequent pressure readings and these compared with a similar series of readings during or after treatment. During treatment, the patient's manner of life should be the same as in the control period. To place a patient in bed during the period of treatment and compare the readings with those when he is active is futile, if we are endeavoring to acquire real evidence.

Mosenthal and Short[6] have studied the effect of short periods of rest on a series of fifty patients with hypertension. In one patient, the systolic pressure dropped from 244 to 200 mm. after a ten minutes' rest. Eighteen patients in this series showed a fall in systolic pressure of 23 mm. or more after periods of rest varying from seven to ninety minutes. These authors report another case in which, following a game of cards, the pressure rose from 170 to 202 mm. Not infrequently a nervous patient, solicitous in regard to his condition, will show a systolic pressure of, we will say, 180 mm. If the arm band is kept in place and the patient engaged in conversation, not infrequently the pressure will fall 20 points or more. Twenty-five unselected records of patients with hypertension were taken from our files, only those with four or more readings being selected. Thirteen of these showed variations in pressure of 50 mm. or more; and five, variations of from 40 to 45 mm. In twenty-three of this series, the maximum pressure was recorded on the patient's first examination. This can probably be accounted for by the emotional disturbance associated with the first visit to the physician. One patient at the first visit had a systolic pressure 50 mm. higher than at three subsequent examinations.

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[3] Major, R. H.: Am. J. M. Sc. **170**: 228 (Aug.) 1925.

[4] Blankenhorn, M. A., and Campbell, H. E.: Am. J. Physiol. **74**: 115 (Sept.) 1925.

[5] McWilliam, J. A.: Brit. M. J. **2**: 1195 (Dec. 22) 1923.

[6] Mosenthal, H. O., and Short, J. J.: Am. J. M. Sc. **165**: 531 (April) 1923.

The high peaks following emotional upset give a clue in regard to one phase of treatment—the necessity of leading a life as free from tension and excitement as possible. To my mind, advice along these lines holds first place in the treatment of this disease. The business man with great responsibilities should be urged to unload some of them to other shoulders. He should be taught to relax, to acquire some recreational hobby. Anger should be curbed. His evenings should be spent quitely at home, not playing bridge or poker. Social gatherings with the excitement and attendant tension should be restricted.

Water Intake.—Many years ago, von Noorden warned against excessive fluid intake in hypertension on the basis of raising blood pressure. Mohr[7] reported that the maximum elimination of nitrogen occurred when the daily output of urine reached 1,500 cc., and fluid intake above this should be avoided. Foster and Davis[8] studied twenty-two patients with hypertension for the purpose of determining the effect of fluid intake on urea excretion. The urea excretion increased with the fluid output up to the 2,000 cc. point. Beyond this, the nitrogen excretion exceeded the intake. Miller and Williams were able to give patients with hypertension 1,000 cc. of water through a Rehfuss tube in an interval of fifteen minutes without increasing the blood pressure. Twenty-five hundred cubic centimeters given within an interval of one hour caused only slightly increased blood pressure. It is highly improbable that any quantity of water drunk by a patient will raise pressure. In the absence of edema, free water drinking may be encouraged.

Sodium Chloride.—There has been considerable discussion in recent years on the rôle of chlorides in hypertension. Allen[9] reported that chloride retention played a rôle in blood pressure. O'Hare and Walker,[10] McLester,[11] Mosenthal[6] and others failed to confirm Allen's findings. It is fair to assume from the evidence that there is no advantage in excessive restriction of chlorides. In fact, this may lead to impaired nutrition and may be actually harmful.

Diet.—There is a rather widespread impression that meat should be eliminated from the diet. This is due to the common belief that hypertension is associated with nephritis. As a rule, these patients do not show nitrogen retention. In such cases, there is no especial reason why meat should be entirely eliminated. True, adequate protein can be supplied without resorting to meat. In some instances, withdrawal of meat may be a real hardship and should not be given as routine treatment. There is abundant evidence that administration of protein up to at least 150 Gm. daily does not affect blood pressure. It is advisable that excessive protein be avoided, but the form in which it is administered is probably not important. The diet should be regulated to avoid obesity, as this means additional strain on a heart already overburdened.

Complete withdrawl of coffee or tobacco is unwarranted, and often serves to remind the patient of his disease. The patient's comfort and happiness should always be considered and unnecessary restriction avoided.

Bleeding and *Sweating.*—The effect of bleeding is very transitory. The actual lowering of pressure is not greater than that following a sweat. When taking blood pressure before and after bleeding, one should bear in mind that the excitement due to the prospective bleeding may raise the blood pressure much above its previous level. A reading taken at this time compared with one after bleeding may be misleading. In four patients with hypertension, by avoiding this psychic factor, I found the maximum reduction in blood pressure, after withdrawing 500 cc. of blood, only 15 mm.

Sweating temporarily lowers the blood pressure. Whether it actually is beneficial to the patient is questionable. It is a form of treatment frequently employed, and no valid objection can be urged against its use in moderation.

Drugs.—The use of drugs to lower hypertension has been largely discontinued. They do not reach the cause of the trouble and rarely add to the patient's comfort, and they are always transitory in their action. Radium water has been recommended as an agent capable of reducing blood pressure. If the literature is searched for real evidence, one's efforts are unrewarded. A few years ago, I followed the results of radium water on four patients with hypertension. It had no effect.

Diathermy.—This is one of the newer agents advocated in hypertension. As far as I have been able to determine, the literature does not contain any observation in which a prolonged study of the blood pressure preceding the treatment has been recorded. Cognizance has not been taken of the great variation in pressure in untreated patients. Until properly controlled observations have been made, the usual case reports cannot create any great enthusiasm.

We may consider the treatment of hypertension as one of many unsolved therapeutic problems. Under these circumstances, it is the duty of the physician to give advice and encouragement that may at least add to the patient's happiness, to avoid reminding him of this menace to his health, and to divert his mind from his disease by advising against the frequent taking of blood pressure, as such a procedure only reminds him of his trouble.

SUMMARY

The etiology of hypertension is undetermined. Until this is decided it is difficult or impossible to discuss, except in a very general manner, preventive measures. It has not been clearly determined how much can be accomplished in the treatment of hypertension. The extreme variation in blood pressure in an individual case demands careful control observation before conclusions are drawn on the value of any method of treatment.

122 South Michigan Avenue.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. MAJOR; ROBINSON; JAMES, LAUGHTON AND MACALLUM; BROWN, AND MILLER

Dr. Joseph L. Miller, Chicago: Is it not true that other organs besides the liver have a very marked effect on blood pressure? Several years ago Dr. S. A. Mathews and I worked on animals and we noted no difference between liver extract and the extract of other organs. I should like to ask Dr. Major whether he sees in this liver extract any prospect more than a mere palliative treatment. I should like to ask Dr. Brown whether this method of treating Raynaud's disease is applicable to Raynaud's disease of the upper extremities. I was interested in his foreign therapy of these cases. Three or four years ago we had a patient with early thrombo-angiitis obliterans of one foot. We gave him injections of typhoid bacilli intravenously, and his trouble disappeared. I did not see that patient until some time ago. The one foot had remained well while the other foot was giving him trouble. Recently I saw a report of a case of thrombo-angiitis obliterans in which the surgeon had given intravenous injections of Ringer's solution. Following this the patient had a temperature of 103 F., and since then, which was a year or more ago, the patient had been feeling perfectly comfortable.

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[7] Mohr: Ztschr. f. klin. Med. **50**: 377, 1903.

[8] Foster and Davis: Am. J. M. Sc. **151**: 49, 1915.

[9] Allen, F. M.: Arterial Hypertension, J. A. M. A. **74**: 652 (March) 1920.

[10] O'Hare, J. P., and Walker, W. T.: Salt in Vascular Hypertension, Arch. Int. Med. **32**: 283 (Aug.) 1923.

[11] McLester, J. S.: Am. J. M. Sc. **163**: 794 (June) 1922.

Dr. J. N. Hunsberger, Norristown, Pa.: I used extract of liver in a case of cardiovascular disease with decompensation in which the patient, a man, aged 56, had a high blood pressure of some years' standing. I saw him first last summer when he was suffering from decompensation. He had a systolic blood pressure of about 270, with a diastolic pressure of about 170. This varied at different times. I kept him in bed for ten weeks. By that time he felt fairly comfortable, except that his blood pressure had not changed after that period of rest. I secured some liver extract through Dr. Karr at Philadelphia. The first injection was 10 cc. After an hour's time there was a drop from 245 systolic to 180, and a drop of the diastolic from 170 to 120. The patient seemed to feel very comfortable. The next day this pressure had gone back to within possibly 20 millimeters of the systolic and diastolic. At the end of three days I repeated the injection and we kept this up for about a month, at intervals of three days. As I said before, his heart was compensating well and he was very comfortable, but his blood pressure came back again. The kidneys were functioning very well. The phenolsulphonphthalein test was normal. However, there were occasional traces of albumin in the urine. The man's condition was very good for about four months, when he contracted grip. The decompensation came back and he died last week. I believe that the treatment with liver extract, when properly standardized, is of value. Any animal extract might cause the same drop, but this drop was so marked in the case reported and the feeling of well being that the patient had during the period of injections so good that this treatment is really worth considering. Dr. Miller brought up a very interesting point of blood pressure following dreams.. Dr. McKenzie of the University of Pennsylvania reported cases of high blood pressure in athletes. After running a hard race an athlete would usually have his blood pressure run up to 200 or more. Of course, this pressure subsided after rest. That might explain why so many men, especially elderly ones, die rather quickly when they overexert themselves.

Dr. E. C. Thrash, Atlanta, Ga.: Hypertension has two outstanding causes, either one or both of which may be acting. One of these causes is thickening and stiffening of the vessels from structural change; the other is vasomotor dyscrasia. The vasomotor disturbances causing hypertension are due to intoxications, and except those resulting from nephropathies these are usually classed as "essential hypertensions." This faulty metabolism may be produced by toxic absorption from the alimentary tract, imperfection in the end products of digestion, endocrine dysfunctions, and retention intoxications, the latter resulting chiefly from diseased kidneys. We sum this up as follows: Metabolism is preparing the food for the cells so that combustion can take place. If this terminal preparation is imperfect because of any of the foregoing causes, combustion is proportionately imperfect. The cells rebel against such food, which rebellion reacts on the vasomotor system, causing a contraction of the arterioles to prevent the influx of food (blood) which the cells are refusing to accept, such resistance producing hypertension. In other words, the cell asks for food and is handed a stone. Excessive food intake is probably the most general cause of this type of hypertension, because excess in food overtaxes the digestive system from the alimentary tract to the cell, and the food reaches the cell imperfectly prepared.

Dr. J. H. Pratt, Boston: Dr. Major has cited a case of arterial hypertension in a physician in which severe headaches and dizziness disappeared after the administration of liver extract. What are his reasons for thinking that the headaches and dizziness were due to the hypertension? Is it not probable that they were of psychoneurotic origin and that their disappearance was due to the encouragement the patient received from knowing he was taking a new treatment that was full of promise?

Dr. F. A. Bryan, Dallas, Texas: I tell these high blood pressure patients not to eat any proteins. We need a very small amount of proteins in comparison with our need for carbohydrates.

Dr. Walter Shropshire, Yoakum, Texas: Dr. Miller cogently called our attention to the fact that we do not know why, and to find the why was necessary before we would be capable of successfully finding the remedies. It had been our observation before we had an instrument for recording blood pressure that men as they grow old, especially those who live sedentary or mental lives, gradually develop hardened arteries or arteriosclerosis. I believe the cause of that has been a faulty digestion. Food taken into the alimentary tract that is not properly digested undergoes fermentation and produces a certain poison which is carried throughout the arterial system and acts as a chemical poison along the artery wall and causes hardening. I believe that if we scrutinize it closely we shall find it a very probable condition in hypertension. The undigested food fermenting produces poison. It has a tendency to irritate the artery walls, to produce hardening of the walls of the arteries, and hence we have hypertension. With a perfectly soft and flexible arterial system we may have temporarily increased blood pressure, but not uniformly nor permanently. Under excitement we may have hypertension exceeding 30 or 40 mm. When that excitement has passed, the blood pressure falls without any remedy whatever. But those cases are not the ones we fear. We fear those cases when hypertension stays high, and I believe that if we look carefully to the digestive tract we shall find that the artery walls are hard and that blood pressure stands and remains high. I was glad to hear Dr. Miller say that the absence of meat in the diet was not necessary, because if a meal of meat is well digested, why should a person refrain from eating meat? We all prescribe milk because milk in fermentation does not produce the violent poison that the fresh meat does. Fresh meat taken in quantities, when there is no residue to ferment and produce poison, will do no harm.

Dr. Emmet F. Horine, Louisville, Ky.: I should like to have Dr. Robinson tell us what amount of time is required for making his test and completing the calculations. With reference to the prognosis in hypertensive heart disease mentioned by Dr. Miller, if one will study these cases by graphic methods, considerable information can be gained. Abnormal electrocardiographic tracings, particularly varying grades of auriculoventricular block, peak notching of the Q-R-S group, low voltage of this group, inversion of the T wave in all three leads or in leads I and II all alter the prognosis materially by showing that considerable change has taken place in the myocardium. When no such abnormalities are found, even though the systolic and diastolic pressures have been rather high, our prognoses are going to be definitely better. Further, observation by the sphygmograph will be of value because it has been found that when pulsus alternans is either constant or follows premature beats the prognosis is relatively bad. With reference to the height of the blood pressure and prognosis, systolic levels are of less value than the diastolic. When the diastolic level is constantly maintained quite high, the prognosis is definitely bad. When the diastolic is constantly maintained at 150 mm. of mercury or above this level, early death usually occurs. The higher the diastolic pressure, the more serious is the outlook; but I have records of patients with diastolic levels maintained at 120 and, when they have followed directions, they have gone along for years in comfort. With reference to the treatment of hypertension, I would emphasize the fact that diet plays an important part. The diet should be regulated first for the reduction in weight, and, secondly, for the control of constipation, if present. Next, I insist on relaxation and on frequent vacations. Nervousness must be controlled. Bromides are of value, as is also phenobarbital, which not only controls nervousness but also has a tendency to lower blood pressure. Any possible focus of infection should be removed. Liver extract offers some definite hope in controlling unpleasant symptoms. I have used it for six months in selected cases that were not controlled by other methods of treatment. I can certainly bear out what Dr. Major said with reference to controlling certain symptoms. In certain cases there is a lowering of the blood calcium. Possibly the administration of calcium will be of some value. No longer do we feel that we should use any of the vasodilator group of drugs as a routine. They are used merely for emergency purposes.

DR. WILBUR A. BAKER, Kansas City, Mo.: I have had about nine cases of hypertension in which I have used liver extract. In one case the results were very striking.

DR. I. I. LEMANN, New Orleans: I have had a small group of hypertension cases treated with liver extract for periods of about six weeks. These cases, seven in all, were in women at about the time of the menopause, in whom no evidence of organic kidney trouble was discovered. There were no changes in the urine. The blood on chemical examination was normal, and other functional tests proved normal. There were no changes in the eyegrounds. These cases had been observed over a long period of years during which many observations of the blood pressure had been made. In none of these women were we able to find any persistent or even marked transitory reduction of the blood pressure. In one there was complete relief from the symptoms of pounding in the head, precordial throbbing and headache.

DR. G. CANBY ROBINSON, Nashville, Tenn.: The question has been asked regarding the length of time it takes to do cardiac output determinations on the basis of the method I described. It is a very time consuming and rather laborious operation. It does not put a particular strain on the subject, but many gas analyses and blood analyses have to be done. I feel that we shall not gather many facts of value from the point of the study of diseases until we have some simpler method than the one I have described. There are some simpler methods and we are now interested in testing out their accuracy and comparing them with the one described, which we believe is an accurate and standard method. In regard to the study of patients with arterial hypertension, I would emphasize the value of the examination of the arteries directly by means of the ophthalmoscope. I feel that the physician can gain a great deal by the examination of the eyegrounds, even if he only studies the condition of the arteries and the pressure on the veins. In studying arterial disease, this method ought to be employed as a routine.

DR. A. A. JAMES, London, Ont.: In regard to the question by Dr. Miller with respect to other extracts, certainly organ extracts on the whole cause a reduction in blood pressure. There are some that raise the blood pressure. For example, an extract from the kidneys and spleen usually will give a rise. But, using other extracts, we have observed so far no evidence of a prolonged fall as we have with the liver extract. We can get the short fall with other extracts but not the sustained fall. With the liver extract there is a very sustained fall. As Dr. Major expressed it, there is a gradual fall. Then there was a question raised regarding the selection of cases. It is important that they should be carefully selected. We are making an attempt to pick out cases of the true malignant type of hypertension, with no demonstrable or apparent cause for the hypertension. That is, with the kidneys apparently normal, no eyeground change, no foci of infection demonstrable, yet these patients have a high blood pressure. The patients are put to bed for two weeks and their blood pressure taken several times a day, after and before meals, etc. The effect of the rest in bed is carefully checked, as are also the effects of diet, hot baths, phenobarbital and nitrites which are given. After all the usual remedial measures have been employed, it is found that the reduction in blood pressure is very slight. We can get a quite pronounced effect from the use of the liver extract in these cases, and up to the present our results have been encouraging.

DR. RALPH H. MAJOR, Kansas City, Kan.: I think the experimental work of Drs. James, Laughton and Macallum and of myself has shown rather clearly that there is a depressor substance in the liver extract which does not correspond to previous depressor substances described. I would agree with Dr. James in answering Dr. Miller's question. A great many organs have depressor substances in them, but I do not believe that evidence will show that these depressor substances have anything more than a temporary effect. The laboratory side of this problem is convincing and conclusive. The clinical side is, of course, much less so. We have studied both the immediate falls in patients and the more lasting falls. By immediate falls I mean falls lasting over a period of hours. Some patients, under properly controlled conditions, for example, a rest in bed as long as a week to ten days, have shown a marked and prolonged fall in pressure following a single injection. Certain other patients, I might say, have shown absolutely no response. This does not, however, prove that we are not dealing with a depressor substance. Dr. Miller showed more than twenty years ago that many hypertensive patients showed no immediate fall with nitrites, and many showed an actual rise. The patients in whom we have seen the best results have been rather young, with no evidence of peripheral arteriosclerosis, whose kidneys were normal, whose urine showed no casts, and whose eyegrounds showed no marked changes. I think that in many of our patients the relief of symptoms is entirely psychic. On the other hand, patients who wake up during the night because of headaches, and patients who state that they are afraid to go down the street because their friends will think they are drunk, have had a disappearance of such symptoms. It is rather difficult to explain such relief from symptoms on a purely psychic basis. I have tried to emphasize that this work is entirely in the experimental stage. We have had a great many disappointing results, but, on the other hand, we have had quite a series of rather suggestive results, and the one thing that has encouraged us particularly has been the fact that a great number of patients have been relieved of disagreeable symptoms. I agree fully with what Dr. Miller said. We have had patients obtain relief without doing anything in particular for them. I believe that the psychic knowledge that something was being done for them was sufficient cause for their feeling of well being.

DR. GEORGE E. BROWN, Rochester, Minn.: Dr. Miller asks whether we have made application of surgical measures in the treatment of Raynaud's disease of the upper extremities. Dr. Adson has removed the left cervical sympathetic ganglions in one patient with Raynaud's disease involving the hands. There was vascular dilatation of the corresponding hand, but not to the degree that has been observed in the lower extremities following the lumbar operation. Further trial is being considered by Dr. Adson. As I stated before, we have been feeling our way, so to speak, in trying to select the proper type of case that will be improved by removal of the vasoconstrictor fibers. I agree thoroughly with what Dr. Miller said about the intravenous injection of foreign proteins. The patients obtaining vasodilatation with the fever induced by the injection of foreign protein had definite vasodilatation following lumbar ganglionectomy. I have frequently observed patients with Buerger's disease, quite similar to the ones described by Dr. Miller, who were given injections of foreign protein with moderately severe reactions, who had marked pain relief and left the hospital apparently compensated. I was much interested in the discussion of the treatment of hypertension. I think that Dr. Miller has correctly stated the present status of this question. There is perhaps one future line of therapy that may shed a gleam of light on this puzzling question; that is, if we can devise an operation that will loosen up a sufficient portion of the vascular system so as to produce a constant lowering of the blood pressure. Dr. Rowntree and Dr. Adson reported a case of malignant hypertension in which lumbar ganglionectomy was performed. This case was followed very carefully for a period of over a year, and the subsequent blood pressure readings showed a lower level averaging about 25 per cent. The clinical improvement was striking. But, this may be another instance of the psychic effects of operation.

HYPERGLYCEMIA WITHOUT GLYCOSURIA IN ONE THOUSAND DIABETIC PATIENTS *

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The present day ideal in the treatment of diabetes mellitus is to supply the patient with a diet sufficient for his particular requirements, and with blood and urine free from sugar and ketone bodies. Thanks to insulin, it is now possible to attain this ideal in the great majority of cases; but every one who treats a fair number of diabetic patients now and again encounters instances in which, while it is possible to keep the urine sugar free, the blood sugar remains at a higher level than is generally considered satisfactory.

Recently, there have been reported cases that are definitely refractory to insulin. Falta[1] had such a patient, who later consulted Basch,[2] and was found by the latter to be impossible of control on the usual diets with insulin, but was easily managed on Petrén's low protein and high fat diet without insulin. Umber and Rosenberg[3] also point out certain types of glycosuria which are insulin refractory. The majority of their patients have renal glycosuria, but some have true diabetes. Berghoff[4] describes what he considers to be "a practical danger in the use of insulin by the patient at home," because he noticed often that patients who were discharged from the hospital with a normal blood sugar and taking insulin reported later showing a definite elevation in the renal threshold for glucose. His observations are well shown in characteristic case records. Still more recently, Major and Davis[5] have recorded several cases of severe but uncomplicated diabetes in young patients under treatment with insulin, who showed very high blood sugars without glycosuria. Berghoff, as well as Major and Davis, hints that the observed hyperglycemia without glycosuria is likely an insulin effect.

Similar cases of hyperglycemia without glycosuria in our own experience have stimulated an interest in the question. In an effort to ascertain the possible explanation of this phenomenon, 1,000 consecutive diabetic case histories were studied. The first 500 of these patients were observed before insulin became available, while the second 500 all received insulin. In both groups, all cases which showed a blood sugar above 0.18 per cent, with a sugar free twenty-four hour urine for at least three consecutive days, were selected for further study.

The important facts in regard to the patients selected from the 500 not taking insulin are shown in the accompanying table (A). It will be seen that of the 500 patients examined thirteen, or 2.6 per cent, were definitely hyperglycemic, but showed no sugar in the urine. Eight were females and five were males. The blood sugar values are in all instances the lowest recorded for that patient, and all are fasting blood sugars. In this group of thirteen cases, the average age at onset of diabetes was 44.2 years, with the extremes varying between 13 and 71 years. The average duration of the diabetes at the time of observation was three and four-tenths years, with nine months and nine years as the extremes. The average fasting blood sugar was 0.22 per cent. An average of 20 per cent above normal in weight prior to the onset of diabetes was present in these cases. The highest systolic blood pressure was 200 millimeters of mercury, the lowest, 96, while the diastolic pressures ranged from 115 down to 70. The average blood pressure was 144 systolic, 85 diastolic. All of these cases were severe except three, which were moderately severe. Eight of the thirteen, 62 per cent, showed arteriosclerosis or hypertension or both. One patient was quite obese. No complications were found in the remaining four, who were all young people with severe diabetes.

Among the second 500 diabetic patients who were treated with insulin there were 23, or 4.6 per cent, with hyperglycemia, but no glycosuria, as shown in the accompanying table (B). The female sex was again preponderant, twenty of these patients being females, and only three males. The average age at onset in this group was 48 years, with extremes of 16 and 68 years. The average duration of the disease at the time of observation was eight and four-tenths years, the extremes being two-tenths and seventeen years. As in the preceding group, the fasting blood sugar averaged 0.22 per cent. The average insulin dose was 18 units daily, the smallest dose being 10 units, and the largest 32 units. The average of 21 per cent above normal in weight before the onset of diabetes was present in this group. Systolic blood pressures ranged between 265 and 92, the diastolic between 120 and 54, with averages of 156 systolic and 85 diastolic. Nine of these cases were severe; twelve were moderately severe, and two showed mild diabetes. Fifteen, or 65 per cent, showed ateriosclerosis, hypertension, angina pectoris, gangrene, or other evidence of cardiovascular disease. Mitral stenosis, a large abscess of the thigh, recent coma, tabes mesentericum, and a monoplegia involving the left arm, probably due to an overdose of insulin, were each encountered once. In three cases no complications were found, and again, as occurred in the uncomplicated cases in which insulin was *not given*, all of these were young persons with severe diabetes.

During the study of these patients, the impression grew that those which are described above as having hyperglycemia without glycosuria closely resembled another group of patients studied at necropsy and recently reported from this clinic by Warren and Root.[6] These writers examined the records of twenty-six cases of diabetes coming to necropsy, and found that thirteen showed hyalinization of the islands of Langerhans. One of these patients was under 45 years of age, and the exception was a patient, aged 24, with severe diabetes, who died of inanition after two years of dia-

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* From the diabetic clinic of Dr. E. P. Joslin in the New England Deaconess Hospital, Boston, and the Department of Internal Medicine, University of Texas Department of Medicine, Galveston, Texas.

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Comparison of Findings in One Thousand Diabetic Patients (Five Hundred Insulin Treated and Five Hundred Noninsulin Treated)

Case	Sex*	Age at Onset	Duration in Years at Time of Observation	Fasting Blood Sugar, per Cent	Insulin Daily Dose Units	Severity	Prognosis	Complications	Maximum Weight, Pounds	Weight per Cent of Normal	Blood Pressure Systolic	Blood Pressure Diastolic	Cause of Death
								A. Patients not Taking Insulin					
1	♀	48	2	0.20	..	Mod severe	Fair	Hypertension	216	+16	190	115	Living
2	♂	13	3	0.21	..	Severe	Fair	None	109	−17	114	64	Living
3	♀	56	5	0.23	..	Mod. severe	Fair	Hypertension; cardiac hypertrophy	210	+18	172	90	Living
4	♀	71	1	0.21	..	Mod severe	Fair	Hypertension; gallstones	194	+31	170	85	Living
5	♀	72	9	0.20	..	Severe	Fair	Hypertension; arteriosclerosis	221	?	190	105	Living
6	♀	54	7	0.20	..	Severe	Bad	Hypertension; arteriosclerosis; trifacial neuralgia	193	+29	200	90	Living
7	♀	28	3	0.24	..	Severe	Fair	Obesity	195	?	120	80	Living
8	♂	55	0.8	0.20	..	Severe	Bad	Arteriosclerosis; pancreatitis acute?	160	?	105	70	Living
9	♀	35	3	0.20	..	Severe	Fair	None	116	Normal	102	80	Living
10	♂	46	3	0.21	..	Severe	Fair	Arteriosclerosis; syphilis	170	+10	154	70	Living
11	♂	22	2	0.20	..	Severe	Fair	None	125	?	118	75	Living
12	♂	52	2	0.20	..	Severe	Fair	Arteriosclerosis	159	+22	115	90	Living
13	♂	22	4	0.24	..	Severe	Fair	None	110	Normal	96	70	Living
Averages		44.2	3.4	0.22					173	+20	144	85	
								B. Patients Taking Insulin					
14	♀	49	17	0.22	20	Mod severe	Bad	Hypertension; arteriosclerosis	185	+29	202	90	Living
15	♂	21	7	0.20	25	Severe	Fair	None	150	+ 8	116	80	Living
16	♀	74	3	0.23	15	Mod severe	Bad	Arteriosclerosis; hypertension; ulcer of foot	159	?	180	100	Living
17	♀	50	10	0.21	15	Severe	Fair	Gangrene of foot; amputation	250	?	140	70	Living
18	♀	64	10	0.20	5	Mild	Bad	Gangrene of foot; hypertension; arteriosclerosis	180	+31	210	94	Living
19	♀	52	1	0.22	10	Mod severe	Bad	Angina pectoris, hypertension; arteriosclerosis	179	+28	162	90	Living
20	♂	29	7	0.21	30	Severe	Fair	Mitral stenosis	200	+ 9	122	70	Living
21	♀	68	0.2	0.21	15	Mod severe	Fair	Arteriosclerosis; hypertension; cataract	159	Normal	160	80	Living
22	♀	16	1	0.22	25	Severe	Fair	Abscess of thigh, 12 by 12 cm	121	Normal	102	70	Living
23	♀	63	1	0.22	10	Mod severe	Fair	Hypertension	173	+30	170	98	Living
24	♀	66	1	0.19	33	Severe	Fair	Recent coma	164	+15	92	54	Living
25	♀	64	0.3	0.22	11	Severe	Fair	Hypertension; paronychia	170	?	160	80	Living
26	♀	52	1	0.20	23	Mod severe	Fair	Arteriosclerosis; peripheral neuritis	153	Normal	142	80	Living
27	♀	49	2	0.27	15	Mod. severe	Fair	Hypertension	200	?	194	70	Living
28	♀	48	14	0.19	10	Mod severe	Bad	Angina pectoris; gallstones; chronic nephritis; popliteal occlusion	200	?	265	120	Living
29	♀	35	4	0.24	30	Severe	Fair	None	179	Normal	112	80	Living
30	♀	29	10	0.21	25	Severe	Fair	Hypertension; carbuncle; suppurative otitis media	170	+29	164	98	Living
31	♀	23	7	0.21	32	Severe	Fair	None	112	Normal	108	70	Living
32	♀	51	4	0.21	5	Mild	Fair	Hypertension; ulcers of feet	260	+105	220	120	Living
33	♂	34	4	0.19	25	Mod. severe	Fair	Tabes mesenterica; syphilis?	185	?	130	90	Living
34	♀	33	5	0.23	20	Mod severe	Fair	Paralysis of left arm (insulin overdose)	120	?	112	80	Living
35	♀	66	1	0.22	15	Mod severe	Bad	Arteriosclerosis; hemiplegia	150	+ 6	160	80	Living
36	♀	47	3	0.24	10	Mod severe	Fair	Arteriosclerosis; gangrene of foot	175	+20	168	96	Living
Averages		48	8.4	0.22	18				172	+21	156	85	
								C. Cases Showing Hyalinization of Islands of Langerhans at Necropsy					
37	♀	34	14	0.19	10	Mod. severe	...	Arteriosclerosis; chronic nephritis	185	+23	130	90	Cardiorenal disease
38	♂	52	14	0.18†	6	Severe	...	Arteriosclerosis; angina pectoris	270	+29	160	82	Angina pectoris
39	♂	35	17	0.12	0	Mod severe	..	Arteriosclerosis; gallstones	170	+16	145	90	Postoperative peritonitis
40	♀	49	10	0.13	90	Severe	.	Arteriosclerosis; carcinoma of pancreas	221	+45	?	?	Carcinoma of pancreas
41	♀	39	14	0.18	0	Mild	....	Arteriosclerosis; gangrenous appendix	210	?	140	80	Appendicitis, gangrenous
42	♂	22	1.8	0.18	0	Severe	....	None	154	+ 8	108	80	Inanition
43‡	♂	23	30	0.27†	0	Mod severe	...	Arteriosclerosis; gangrene	224	+51	145	90	Uremia
44	♂	53	0.3	0.19	0	Mod severe	...	Arteriosclerosis	195	+17	140	95	Duodenal ulcers
45	♀	52	3	0.15§	10	Mod severe	....	Arteriosclerosis; bronchopneumonia	170	+21	180	90	Bronchopneumonia; purulent pericarditis
46	♀	63	1	0.20	0	Mod severe	....	Arteriosclerosis; gangrene	148	+11	172	78	Angina pectoris
47	♂	27	25	0.32†	12	Mod severe	....	Arteriosclerosis; septicemia	252	+66	160	90	Septicemia (streptococcus hemolyticus)
48	♀	63	0.4	0.27	35	Severe	....	Arteriosclerosis; abscesses	220	+37	236	90	Multiple abscesses
49	♂	64	3	0.33†	15	Mod. severe	....	Arteriosclerosis; septicemia	225	+26	170	90	Septicemia (staphylococcus)
Averages		44.3	10.3	0.18#	25¶				204	+31	157	87	
								D. Cases Without Hyalinization of Islands of Langerhans at Necropsy					
50	♀	37	25	0.19	14	Mod severe	....	Arteriosclerosis; gangrene	210	+41	165	80	Angina pectoris
51	♂	10.5	0.1	0.07	0	Severe	....	Coma	75	+12	100	60	Coma
52	♂	13.5	0.2	0.09	0	Severe	....	Coma	105	+15	120	70	Coma
53	♂	25.9	0.1	0.10	0	Severe	....	Lobar pneumonia	185	+17	120	75	Lobar pneumonia
54	♂	32	2.5	0.23†	0	Mod severe	....	Liver abscess	230	+38	120	70	Multiple abscess of liver
55	♂	60	9	0.17	0	Mod severe	...	Arteriosclerosis; gangrene	228	+28	180	100	Cardiac failure
56	♂	18	1	0.30†	0	Severe	...	Paranephric abscess	145	Normal	115	75	Paranephric abscess
57	♂	41	17	0.26†	0	Mod severe	...	Pulmonary tuberculosis	210	+25	142	82	Pulmonary tuberculosis
58	♀	15.4	0.6	?	60	Severe	....	Coma	115	?	?	?	Coma
59	♂	61	0.1	0.14	7	Mod. severe	...	Septicemia (streptococcus)	260	+41	220	110	Septicemia
60	♂	38	9	0.14	25	Severe	....	Appendicitis, acute; syphilis.	175	?	115	70	General peritonitis
61	♂	53	11	0.16	20	Mod. severe	....	Arteriosclerosis; gangrene; septicemia	220	+57	144	62	Septicemia (streptococcus hemolyticus)
62	♀	29.4	0.1	0.11	25	Severe	....	Exophthalmic goiter; septicemia	200	+46	100	0	Septicemia
Averages		23.9	5.8	0.13#	27¶				161	+23	137	71	

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* In this column, ♂ indicates male; ♀, female.
‡ Restricted necropsy.
† Urine never sugar-free while under observation.
§ One-half hour after 5 units of insulin.
# Only those cases with sugar-free urine included in averages.
¶ Average of cases given insulin only.

betes in the preinsulin days. This particular case showed no complications. The remaining twelve cases with hyaline changes in the islands at necropsy presented varying degrees of arteriosclerosis and cardiac complications. In order to demonstrate how closely these thirteen cases resemble the clinical cases with hyperglycemia without glycosuria, section C of the accompanying table was prepared from the clinical and necropsy records of the former group. A study of the data discloses the following important points: 1. Six patients were males and seven were females. 2. The average age at the onset of diabetes was 44.3 years. 3. The duration at the time the observations were made was ten and three-tenths years. 4. The average fasting blood sugar without glycosuria was 0.18 per cent. It was not possible to secure complete data on this point in four cases, because the patients were seen only a short time before death, and did not have a sugar free urine while under observation. Patient 45 was sugar free only once, and then temporarily after 15 units of insulin. The blood sugar figures from these five cases are not included in the average. However, the tendency to hyperglycemia without sugar in the urine was a distinct feature in this series of cases. 5. Arteriosclerosis was demonstrated in twelve cases, one in a young person with a severe uncomplicated diabetes. 6. The percentage of weight abnormality averaged plus 31 per cent. 7. The average systolic blood pressure was 157; diastolic, 87, the systolic extremes being from 236 to 108, and the diastolic, from 90 to 78.

The thirteen patients in Warren and Root's series who showed no hyalin in the islands are tabulated for comparison in the accompanying table (D). Referring to this group we find that: 1. Three were females and ten were males. 2. The average age at onset was 33.9 years. 3. The average duration at the time of observation was 5.8 years. 4. The blood sugar averaged 0.13 per cent. Three patients in this group were never sugar free while under observation; hence, the figures from those were not included in the average. 5. Arteriosclerosis was found in only three of these cases, and in these three the highest blood sugars for the group were observed; namely, 0.19, 0.17 and 0.16 per cent. In the remaining ten cases the chief complications were coma in three cases, septicemia in two cases and lobar pneumonia, liver abscess, paranephric abscess, pulmonary tuberculosis, and general peritonitis each in one case. 6. The weight in this series averaged plus 33 per cent above normal. 7. The average systolic blood pressure was 137; diastolic, 71, the systolic extremes ranging from 220 to 100, and the diastolic from 110 to 0.

It appears, therefore, that the cases which have been studied at necropsy, and show hyalinization of the islands of Langerhans, are very similar to the cases that were found clinically to present high blood sugars without showing sugar in the urine. This similarity was not present in another group without hyalinized islands. One familiar with the lack of uniformity in the pathologic picture of the pancreas in diabetes would naturally be somewhat reluctant to ascribe a particular clinical finding to a certain type of island as found at necropsy. However, the resemblance between the clinical cases of diabetes with hyperglycemia, but without glycosuria, and the cases which have been described as showing hyalin in the islands at necropsy is so striking it is difficult not to believe that there is some connection between this pathologic change and those cases which are distinguished by this clinical complex. It is not easy to explain either the exact nature or significance of hyaline changes in the islet tissues of the pancreas, but apparently it is a common change in those who have had diabetes over a number of years and in severe diabetic youthful patients, in whom the disease has run a very much more rapid course. Hyalinization would appear, therefore, to be in the nature of a late or terminal pathologic change, which is clinically seen associated with hyperglycemia without glycosuria.

Granting the accuracy of this deduction, it is still difficult to explain the exact mechanism in the production of the changes that cause an elevation in the renal threshold for sugar. In the manifestly arteriosclerotic patient, it seems justifiable to conclude that the resulting renal injury is sufficient to account for the elevation in the sugar threshold. In some severe cases in young people, however, identical clinical findings may be obtained in the absence of lesions of the blood vessels or kidneys demonstrable by the methods employed. It does not seem reasonable that insulin per se is responsible for the alteration in renal permeability. It is true that in the series of patients not taking insulin there were 2.6 per cent, as against 4.6 per cent in the insulin treated group who showed hyperglycemia without glycosuria. This, however, seems rather to come about from the fact that many of the patients in the insulin treated series could not have been kept aglycosuric without insulin, and hence would not have come up for consideration in the noninsulin treated group. It is conceivable, in severe diabetes in young patients, who have progressed to the stage of hyaline degeneration in the islands, that there may be a compensatory elevation of the kidney threshold for glucose; but such cannot be positively shown until more is known concerning the factors involved in the maintenance of normal renal threshold values.

CONCLUSION

It appears justifiable from the material at hand to associate elevation of the renal threshold for glucose with hyalinization in Langerhans' islands in uncomplicated diabetes. When we have such a conception of the underlying cause of hyperglycemia without glycosuria, and regard hyaline changes as a late event in the course of the disease, such clinical findings sustained over a long period of time would appear to have a definitely unfavorable prognostic importance. This is in addition, of course, to the constantly increased likelihood of infections in those with hyperglycemia with or without glycosuria.

5 Peterborough Street.

Influence of Universities on Advancement of Public Health.—While the necessity for the training of the higher, professional or expert administrators is now unchallenged, the equal necessity with regard to the training of the rank and file of the sanitary army is not yet so fully recognized. Knowledge which is the possession of a few can only benefit a few. Just as in the monastic days of the older universities the value of the trained itinerant preachers was recognized, so today the universities, or some of them, recognize the vital importance of the training of those officers who are in daily touch with the people, and whose business it is to translate and apply established facts. Among this class are sanitary inspectors and health visitors, the staffs engaged in the inspection of meat and foodstuffs, or in the suppression of smoke and the proper control of boiler furnaces, and so forth. It is in connection with the university schools of social science, or public health, that this training is provided, and the certification of the candidate follows, as in the case of the diploma of the health officer.—Hope, E. W.: *Proc. Roy. Soc. Med.* 19:29 (March) 1926.

EFFECT OF INJECTIONS OF DEXTROSE AND OF INSULIN AND DEXTROSE ON BLOOD SUGAR

PRELIMINARY REPORT *

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FORRESTER RAINE, M.D.
MARGARET C. PERRY, A.M.
AND
JANE BUTTLES, A.B.
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For several years we have been interested in the therapeutic administration of dextrose solutions intravenously, both with and without insulin, to patients with nondiabetic acidosis and excessive vomiting of pregnancy. The results that have followed this treatment have been published elsewhere.[1] Seriously sick patients of these types are relatively uncommon, and it will be some time before a number sufficient to report can be studied carefully in the manner outlined below. In the meantime, in order to learn more of the mechanism causing these results, it seemed essential to study the effects which these therapeutic procedures have on normal individuals. Two observations, in the course of our work with normal subjects, seem of sufficient interest to report at this time.

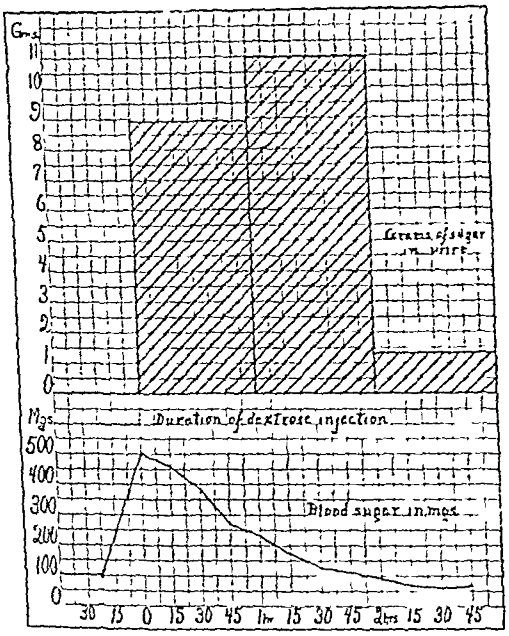

Chart 1.—Subject P., weight 63.5 Kg.; intravenous injection of 25 per cent dextrose, 1.75 Gm. of dextrose per kilogram of body weight given in eighteen minutes.

Dextrose, 1.75 Gm. per kilogram of body weight, in 10 and 25 per cent solutions was injected intravenously into healthy young men. The 25 per cent solution was given in approximately twenty minutes, and the 10 per cent solution at the rate of 0.9 Gm. of dextrose per kilogram of body weight per hour, practically two hours. Blood sugar determinations (Folin-Wu method) were made before and every fifteen minutes after the injection was started. The sugar excreted in the urine was determined (Folin-Berglund method), in some instances on specimens collected by catheter every fifteen minutes, and in others on specimens voided two, three, four and five hours after the injection was started.

Sometimes the subjects were given insulin,[2] the dose being one unit to 3 Gm. of dextrose in every instance. The manner of giving the insulin varied. It was given hypodermically in a single dose one-half hour before the administration of dextrose, or in divided doses, fifteen and seventy-five minutes after the beginning of the dextrose injection. Insulin was also given intravenously mixed with the dextrose solution.

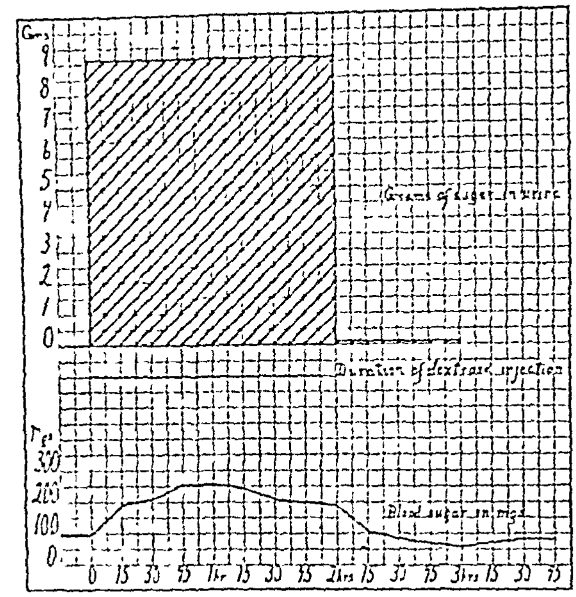

Chart 2.—Subject M., weight, 64 Kg.; intravenous injection of 10 per cent dextrose, 1.75 Gm. of dextrose per kilogram of body weight at rate of 0.9 Gm. per kilogram of body weight per hour.

The accompanying charts show the blood sugar curves and the amount of sugar excreted. Only one set is presented, since similar results from the respective procedures were obtained with all four subjects.

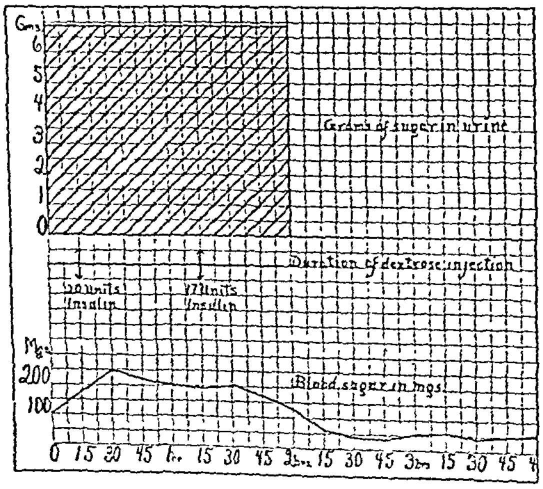

Chart 3.—Subject M., weight, 64 Kg.; intravenous injection of 10 per cent dextrose, 1.75 Gm. of dextrose per kilogram of body weight at rate of 0.9 Gm. per kilogram of body weight per hour; 20 units of insulin given fifteen minutes and 17 units seventy-five minutes after injection of dextrose was begun.

The rapid injection of a 25 per cent solution (which contained the same amount of dextrose as given in 10 per cent solution) produced a very marked hypergly-

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* From the Laboratories of Columbia Hospital.

[1] Thalhimer, William: Insulin in the Treatment of the Toxemic Vomiting of Pregnancy, J. A. M. A. 82:696 (March 1) 1924; Surg., Gynec. & Obst. 39:237 (Aug.) 1924; Insulin Treatment of Postoperative (Nondiabetic) Acidosis, J. A. M. A. 81:383 (Aug. 4) 1923; Am. J. Obst. & Gynec. 9:673 (May) 1925.

[2] The insulin used in this investigation was furnished free by Eli Lilly & Co.

cemia followed by a mild hypoglycemia. There was considerable loss of dextrose in the urine.

The slow uniform injection of a 10 per cent solution caused a gradual rise in the blood sugar level during the first hour; but, although the injection continued at the same rate, during the second hour the blood sugar level instead of continuing to increase, as might be expected, showed a gradual decline. Following the injection, the blood sugar went to a lower level than after the rapid injection and the hypoglycemic reaction was rather severe, similar to a moderately severe insulin shock.

When insulin was given hypodermically at fifteen and at seventy-five minutes after the dextrose injection was begun, the blood sugar level did not show such a marked increase and there was a decrease in the amount of sugar excreted.

Insulin, given hypodermically one-half hour before the dextrose, increased the rate of removal of sugar from the blood so that the blood sugar curve rose still less and there was even less sugar excreted.

The same amount of insulin mixed with the dextrose and given intravenously permitted the least rise in blood sugar and the smallest elimination of sugar in the urine.

There was a decided uniformity in blood sugar curves and urine sugar output in different persons when the same method of administration was used. All showed the decrease of blood sugar during the latter part of the slow administration of dextrose without insulin; to use the phrase of Reinhold and Karr,[3] a stimulation of "the mechanism removing sugar from the blood." This is in reality an overstimulation because, when the injection is ended, a decided hypoglycemia results.

It has been known for years that a dextrose test meal caused a reacting hypoglycemia; Hamman and Hirschman[4] and others have shown that a second ingestion of dextrose, as the blood sugar rose to normal, produced little if any increase in the blood sugar level. On the other hand, Southwood,[5] Sevringhaus,[6] du Vigneaud and Karr[7] and others found that starvation, or a carbohydrate free diet, decreased the ability of the individual to utilize dextrose as shown by the tolerance test meal. Sevringhaus also found that experimental ketosis, induced by starvation, especially inhibited the "mechanism removing sugar from the blood."

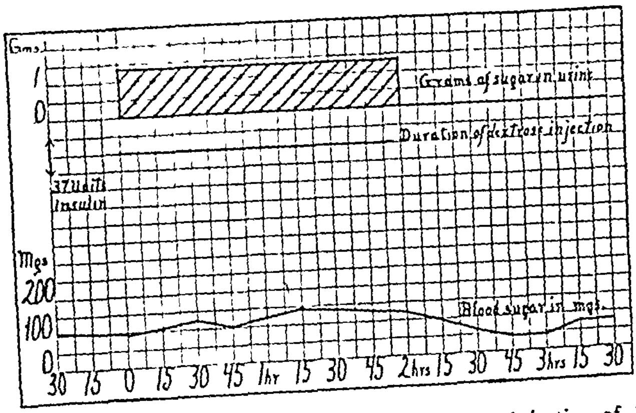

Chart 4.—Subject M., weight, 64 Kg.; intravenous injection of 10 per cent dextrose, 1.75 Gm. of dextrose per kilogram of body weight at rate of 0.9 Gm. per kilogram of body weight per hour; 37 units of insulin given thirty minutes before the injection of dextrose was begun.

We have not determined whether the slow injection of dextrose stimulates oxidation or storage, nor do we know whether the increased rate of removal of dextrose from the blood is caused by an increased output of insulin. These questions remain for further investigation.

SUMMARY

The intravenous injection of 10 per cent dextrose at a slow rate into normal persons induces a more rapid removal of sugar from the blood, so that during the latter part of the injection the blood sugar level, instead of continuing to increase, actually declines.

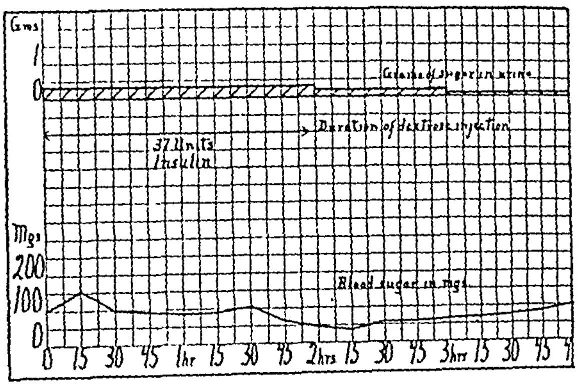

Chart 5.—Subject M., weight, 64 Kg.; intravenous injection of 10 per cent dextrose, 1.75 Gm. of dextrose per kilogram of body weight at rate of 0.9 Gm. per kilogram of body weight per hour; 37 units of insulin was mixed with the solution of dextrose.

Insulin mixed with the dextrose solution and given intravenously causes a more rapid and greater removal of sugar from the blood than when the insulin is given subcutaneously.

SAFEGUARDS IN CATARACT EXPRESSION *

JOHN GREEN, M.D.
ST. LOUIS

In an effort to safeguard every step in the "expression"[1] of cataract after capsulotomy, the routine here described has been developed. This paper deals solely with certain points in operative technic; hence the general preoperative preparation of the patient will not be discussed.

LOCAL PREPARATION

A culture is made in every case. If the conjunctival sac is clinically clean and there is no evidence of dacryocystitis, little attention is paid to the bacteriologic report. Atropine, 2 per cent, is instilled one hour and also one-half hour before operation. The lids, lashes and ocular adnexa are thoroughly scrubbed with liquid soap. The eye is then flooded with from 10 to 15 drops of a 4 per cent solution of strong silver protein, which is allowed to remain in contact with the conjunctiva for five minutes. A stream of a tepid solution of boric acid (2 per cent) rather forcibly washes out the silver protein solution, together with any conjunctival detritus. The palpebral margins and caruncle are wiped with conical swabs.

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3. Reinhold, J. G., and Karr, W. G.: Utilization of Carbohydrates, abstr. Am. J. M. Sc. **171**: 467, 1926.

4. Hamman, L., and Hirschman, L. I.: Bull. Johns Hopkins Hosp. **30**: 306, 1919.

5. Southwood, A. R.: Some Effects of Carbohydrate Deprivation on Pancreatic Function, M. J. Australia **2**: 460 (Nov. 3) 1923.

6. Sevringhaus, E. L.: The Effect of Fasting on Carbohydrate Utilization, abstr. J. Biol. Chem. **68**: xlviii, 1925; The Pancreatic Response to Carbohydrate Ingestion, Science **61**: 92, 1925; The Effect of Ketosis on Insulin Action in the Rabbit, abstr. J. Biol. Chem. **67**: xliii, 1926.

7. Du Vigneaud, Vincent; and Karr, W. G.: Carbohydrate Utilization: Rate of Disappearance of *d*-Glucose from the Blood, J. Biol. Chem. **66**: 281 (Nov.) 1925.

* Read before the Section on Ophthalmology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. This term, suggested by Gifford (Am. J. Ophth. **7**: 487 [June] 1924) to denote removal of the lens by pressure, seems very apt and, in my opinion, deserves wide acceptance.

PRELIMINARY IRIDECTOMY

The performance of iridectomy several weeks prior to the expression has generally been regarded as an important safeguard. It is, I believe, almost universally practiced in the case of one-eyed persons and, to a somewhat less extent, in cataract occurring in those with a high degree of myopia, in complicated cataracts, or when there is reason to believe that the vitreous is fluid. At least one distinguished colleague has stated that if he himself were to be operated on for cataract he would insist that the operation be done in two stages. I imagine that his feeling is shared by many.

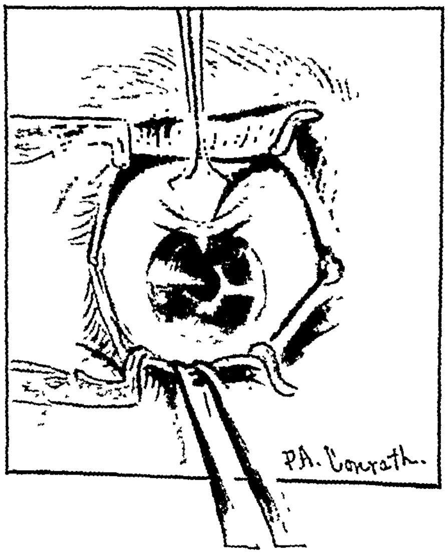

Fig. 1.—Subconjunctival incision with keratome.

If surgeons are convinced of the preeminent value of this procedure, why is it not more generally practiced? The answer is not far to seek. It involves two hospital periods; there is a slight added risk of infection; patients living at a distance are loath to make two journeys to the city. These, after all, are trivial objections. If the surgeon is thoroughly convinced of the supreme value of preliminary iridectomy, he will be able to persuade fully 90 per cent of his cataract patients to submit to the two-stage operation. His arguments will be all the more convincing if he can assure the patient that the fee will be no higher. One of my colleagues, who shares my views, has stated that he would rather make a lower fee for a two-stage operation, so thoroughly is he convinced that the latter is for the best interest of the patient.

What, precisely, are the advantages of preliminary iridectomy? In the first place, it is probably the safest intra-ocular operation we are called on to perform. In my own experience I cannot recall a single case in which any serious consequences have occurred. I have on two occasions clumsily injured the lens with the point of the keratome with subsequent swelling and lens protein reaction, necessitating extraction within two weeks. The danger of infection is almost nil.

One cannot foretell how a patient is going to behave in a cataract operation: the apparently docile sometimes lose all control, and, *per contra*, the overwrought and excitable may prove perfectly tractable. At the time of the iridectomy one gains an excellent idea of the probable behavior of the patient at the expression and will be governed accordingly. Moreover, an iridectomy can be performed on the "bad actor" with the certainty that the patient's misbehavior will not prevent the execution of a finished technic nor in any way imperil the success of the operation. The psychic effect is a valuable asset. Having passed painlessly through the first ordeal and been assured by the surgeon of a satisfactory outcome, the patient's confidence in himself and his surgeon is heightened, so that he loses all dread of the second operation. Should complications (vitreous loss, etc.) occur at the time of the expression, the placidity of the patient and his easy acquiescence to all commands are important factors in enabling the surgeon to complete the operation satisfactorily. I myself would much rather operate on a patient who has this mental attitude than on one whose nervous hypertension has been lowered by preoperative narcotics.

TECHNIC

The point of the keratome is hooked into the conjunctiva about 4 mm. above the limbus. The conjunctiva is dragged down to the limbus, thus forming a fold. The keratome enters the chamber 0.5 mm. back of the limbus. The incision, which should not be more than 5 or 6 mm. in length, is thus strictly subconjunctival (fig. 1). After withdrawal of the keratome, the conjunctival slit is slightly enlarged laterally with scissors. The flap is then grasped by the assistant a little to one side of the midpoint by single toothed fixation forceps. Gentle traction downward serves the double purpose of fixation and causes the keratome wound to gape slightly (fig. 2). The iris is grasped near the pupillary margin, withdrawn and cut off by iris scissors held horizontally. In case of immature cataract, the lens is massaged through the cornea with a Daviel spoon. If blood from the iris or conjunctival flap fills the chamber, it is easily coaxed or syringed out (by means of the Fox irrigator with physiologic sodium chloride solution). The angles of the coloboma are then replaced, and the conjunctival flap is stroked into position. It will be seen that this method is very similar to the one advocated by Reese in the performance of iridectomy for glaucoma, except that the keratome incision is shorter and nearer the limbus.

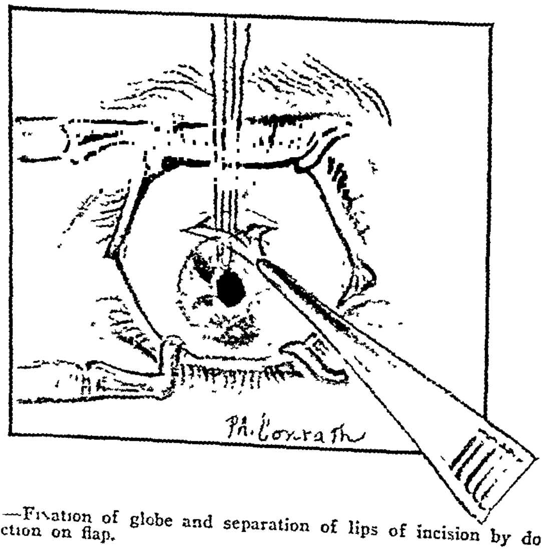

Fig. 2.—Fixation of globe and separation of lips of incision by downward traction on flap.

Complete anesthesia of the iris is secured by injecting 3 or 4 drops of a 2 per cent procaine solution subconjunctivally just below the lower limbus. For surface anesthesia, 4 drops of 5 per cent cocaine solution is instilled.

THE EXPRESSION

The expression is performed from four to six weeks later. A trapezoidal conjunctival flap is fashioned above the cornea. From the ends of a short horizontal incision, scissor cuts are made downward and inward and downward and outward (fig. 3). In preparing this flap, a little difficulty is always experienced when separating it from the sclera immediately adjacent to the cornea. This is due to the fact that the conjunctiva at this site has become somewhat thickened and adhesions have formed, binding it rather firmly to the episclera. For separating these adhesions I have found the blunt dissector, originally devised by Beard, a very efficient instrument. The flap is grasped by smooth forceps and held taut by traction downward while the dissection is being carried out. Care should be taken to continue the dissection right down to the limbus; it is especially necessary that the lateral wings be thoroughly freed from the underlying tissue. The flap is about twice as thick as an ordinary conjunctival flap and is very much more sturdy. At this point a Verhoeff double-armed suture [2] is inserted in the episclera and the two needles are passed from below upward through the midpoint of the horizontal edge of the conjunctival flap in the precise manner that has been described by its author. The loops of the sutures are then disposed out of the way.

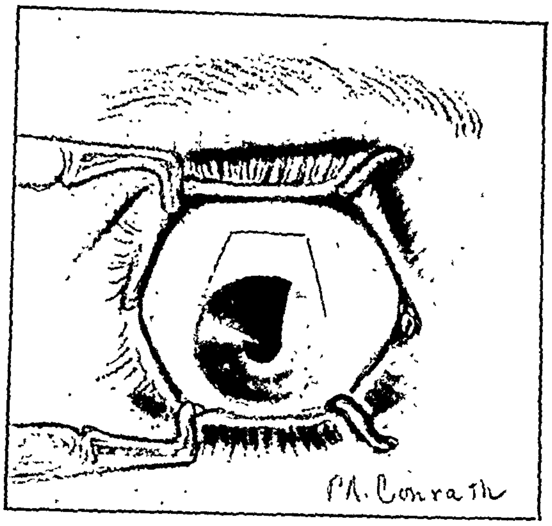

Fig. 3.—Outline and dimensions of trapezoidal flap.

The four threads which extend vertically downward across the face of the cornea are passed between the arms of the single tooth fixation forceps which grasps the conjunctiva 1 mm. below the lower corneal pole. The threads, which are closely collected together, are *not* grasped by the fixation forceps. As the operator is about to begin the section (with a Graefe knife) the assistant grasps these collected threads with a second pair of fixation forceps and exerts gentle traction downward (fig. 4). The purpose of this maneuver is to keep the base of the flap away from the corneoscleral junction and sclera adjacent. Before resorting to this method I would occasionally have some difficulty in completing the section properly, as the knife would tend to "hang" at the moment of emergence (owing to the presence of adhesions and cicatricial tissue), the flap would be infolded, and a continuation of the section in the same plane would tend to sever it. The incision should terminate in the sclera just back of the base of the flap.

CAPSULECTOMY

Capsulectomy, i. e., removal of the anterior capsule with some type of capsule forceps, is preferred to capsulotomy with the cystotome. By allowing the blades of the forceps to separate widely, going well under the lateral limbs of the iris, I endeavor to secure a large bite of capsule with some underlying cortex. In the case of cataract with soft cortex or fluid beneath the capsule (morgagnian, etc.) the capsular surface may elude the grasp of the forceps, in which case a quadrilateral cut is made with the cystotome, and the capsule thus separated is removed with the forceps.

EXPRESSION OF THE LENS

The lens is expressed in the ordinary way. A spatula is held in the left hand and slightly depresses the posterior lip of the wound as the lens is emerging. The spatula may also be useful to aid in delivery of the lens should it, when partially delivered, hang in the wound. The delivery of the lens is unhurried and is especially slow if there is evidence of after-following cortex. Side to side pressure strokes with a Daviel spoon or hook are continued until all expressible cortex has followed the delivered lens. The moment the lens is delivered, the two arms of the suture are drawn up and loosely tied in a single knot. If any cortical material or loose shreds of capsule are visible in the pupillary space, preparation is made for irrigating the chamber. The two arms of the suture are entrusted to the assistant, who makes gentle lateral traction. The "pull" should be just enough to draw up the flap to its original position. The irrigating tip is inserted in one angle of the wound, the iris repositor in the other. Irrigation

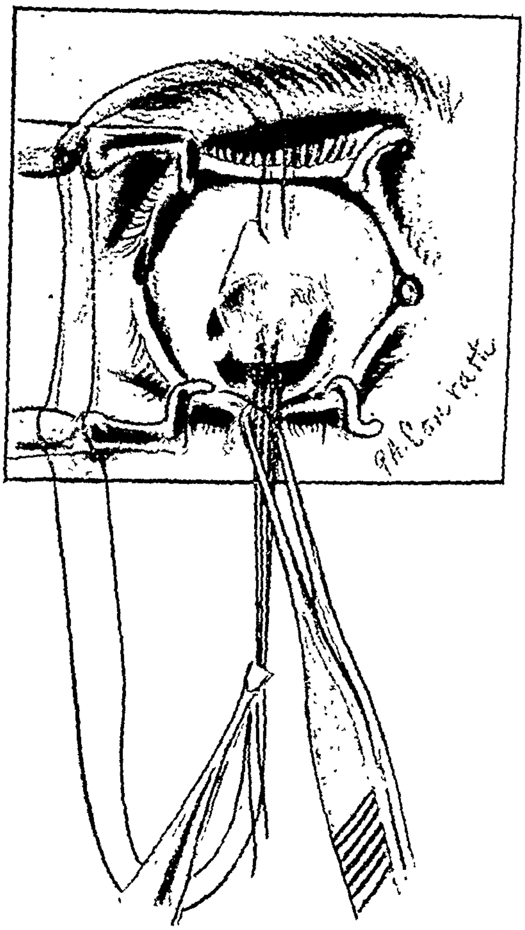

Fig. 4.—Flap held away from region of section by downward traction on threads passed through arms of fixation forceps.

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2. Verhoeff, F. H.: The Scleroconjunctival Suture in Cataract Extraction, Am. J. Ophth. 8:886 (Nov.) 1925.

is then carried out very readily, the repositor being turned slightly to spread the lips of the incision and thus insure easy egress of the cortex and irrigating fluid (fig. 5). If necessary, the positions of the tip and repositor can be reversed. During the irrigation the operator must watch closely for presentation of vitreous, which should be the signal for immediate withdrawal of both irrigating tip and repositor and the simultaneous tightening of the suture by the assistant. A granny knot then completes the tying of the suture. One may then proceed at his leisure to replace the angles of the coloboma and to pick up blood clots and mucous débris. Thanks to the suture, the toilet may be deliberately carried out even in cases in which vitreous has been lost. A conjunctival suture is placed in each upper angle of the trapezoidal flap (fig. 6).

VITREOUS LOSS PRIOR TO DELIVERY OF THE LENS

Two factors—the preformed flap with suture inserted and the completed iridectomy—are great aids in helping to cope with that most disconcerting complication, presentation or loss of vitreous prior to delivery of the lens. Such an occurrence necessitates an extraction with the loop, which is almost always accompanied by further loss of vitreous. This situation may well deter the boldest operator, and has been the occasion, more than any other, for "backing out" of the operation. With the two safeguards noted, one should hardly ever be deterred from completing a loop extraction. The instant the lens is out, the suture is pulled home and tied. Protruding beads of vitreous may be wiped away or clipped off, and the toilet of the wound, including exact replacement of the angles of the coloboma, can be carried out with a precision and completeness that are impossible otherwise. In case of excessive loss of vitreous, it is desirable to fill the eye with physiologic sodium chloride solution.

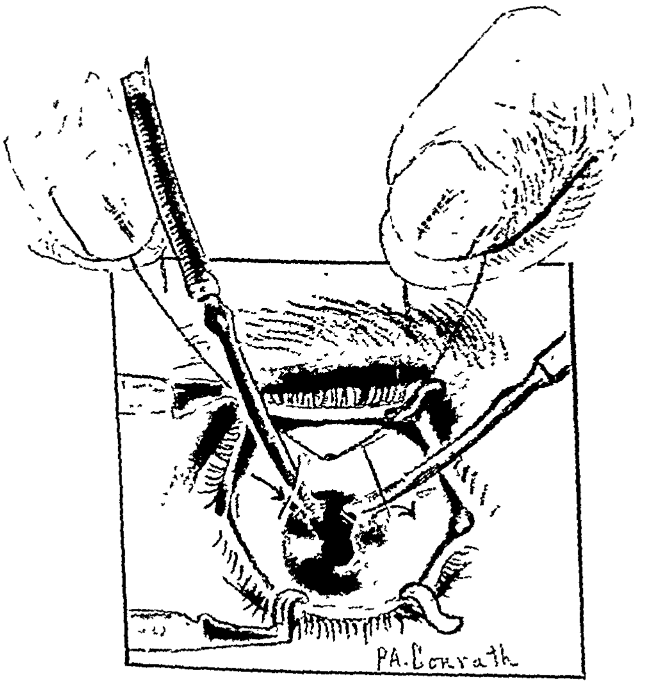

Fig. 5.—Irrigation under loosely tied flap.

ANESTHESIA

The manner of securing adequate anesthesia of the iris at the time of the iridectomy has been described. For the expression, it is usually sufficient to instil four times at two-minute intervals a 5 per cent solution of cocaine and epinephrine. Akinesia is not employed as a routine. One can gain much information as to the probable behavior of the patient by the way he reacts at the time of the iridectomy. The "squeezer" and "bad actor" will usually betray his true character. If dealing with such a patient, one should most certainly splint the orbicularis. Intra-orbital injection of procaine is, in my opinion, unnecessary in cataract extraction.

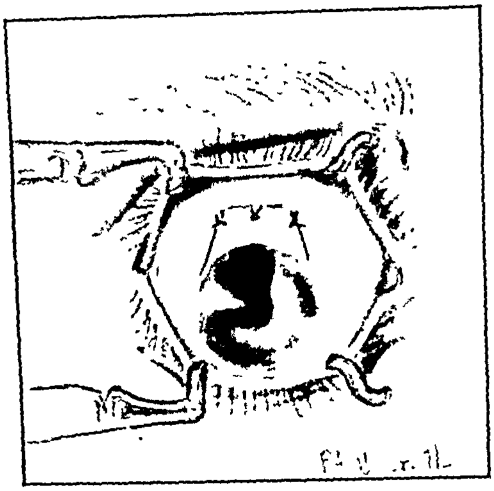

Fig. 6.—Completed operation.

AFTER-CARE

The prompt agglutination of the flap insures early reestablishment of the anterior chamber. It is practically impossible for the flap to be displaced, whatever position the patient may assume. It is thus possible (and desirable) to turn the patient to either side, to elevate the head of the bed, or in case of necessity (difficult urination, gas pains, hypostatic congestion) to get the patient out of bed. Codeine, one-half grain (0.03 Gm.) is given hypodermically the first night after the operation. The patient is permitted to get out of bed at the end of twenty-four hours; the eye is dressed at the end of seventy-two hours. A binocular bandage is reapplied for forty-eight hours. The operated eye is left open on the sixth day and the sutures removed on the seventh.

To illustrate the value of the large adequately anchored flap the following case is cited:

REPORT OF CASE

A. H., a man, aged 82, with a mature cataract, had pyelitis and cystitis incident to an enlarged prostate gland. The expression was performed, Oct. 14, 1925. Some difficulty was experienced in forming the flap and making the section, owing to the unruliness of the patient. The afternoon following the operation he became nauseated and vomited several times. During the night, the abdomen became distended, accompanied by frequent vomiting attacks and the passage of purulent and bloody urine. At the dressing the eye was found to be in good condition with the chamber reformed, the sutures holding perfectly. The abdominal distention failed to yield to the passage of a rectal tube, so an oxgall, magnesium sulphate and turpentine enema was given, followed by pituitrin "S" (surgical) hypodermically. This was followed by partial relief (expulsion of flatus, etc.). During the night he had a severe chill, after which the temperature rose to 102.6 F. His general condition improved following the administration of a purgative and hexylresorcinol. At no time during this stormy period was there any unfavorable reaction in the eye, and recovery ensued with excellent vision.

In seventy-six consecutive operations the ultimate visual results were as follows:

6/4, one; 6/5, seven; 6/6, eight; 6/8, sixteen; 6/10, sixteen; 6/12, seven; 6/16, seven; 6/20, two; 6/25, four; 6/32, three (corneal scars from trachoma); 6/40, one (dense membrane; patient died before discission); 6/80, one (diabetes, central retinitis); 1/32, one (dense corneal scar from trachoma); light perception, one (tabetic optic atrophy); total loss, one (choroidal hemorrhage).

There were four "loop" extractions and one intracapsular extraction (by traction). Vitreous was lost (from 1 to 4 drops) in ten cases. Discission was performed in twenty cases. There were no infections.

SUMMARY

1. Iridectomy under a conjunctival flap heals promptly, without reaction and with little or no danger of infection.

2. In case of immature cataract, opportunity is offered for artificial maturation.

3. Misbehavior by the patient will not imperil the success of the iridectomy and will warn the operator to use extra precautions (akinesia, lid hooks, etc.) at the time of the expression.

4. A realization of the painlessness of the first operation and postoperative period greatly heartens the patient and abolishes his dread of the second operation.

5. The trapezoidal flap possesses all the advantages of the small triangular flap and, in addition, (*a*) it is thicker and more sturdy; (*b*) it covers the entire section, and (*c*) it is held in perfect position under all circumstances by the central Verhoeff stitch and the lateral conjunctival sutures.

6. The steadying of the flap by downward traction on the threads of the Verhoeff stitch enables the operator to complete the section without fear of cutting off the flap.

7. With the Verhoeff suture loosely tied, the flap is drawn into good position and irrigation of the chamber may be carried out with great security. Should vitreous present or prolapse, the immediate tightening of the suture will cause the vitreous to recede or prevent further loss.

8. The toilet of the wound can be carried out leisurely and effectively even after vitreous loss.

9. There is little tendency for the iris to prolapse (no "visible" prolapses in seventy-six cases).

10. Iritis, if it occurs at all, is mild and easily controllable by atropine, heat and salicylates.

11. Anterior synechiae are very rare.

12. There are a large number of "keyhole" pupils.

13. The secondary membrane is usually very thin and can be sufficiently slit by a single vertical incision (Wheeler).

14. Thick membranes are dealt with by Ziegler's inverted V-shaped discission.

Metropolitan Building.

ABSTRACT OF DISCUSSION

Dr. Clarence King, Cincinnati: The conjunctival or corneal suturing of cataract wounds has been enthusiastically endorsed in recent years in this country by Verhoeff, Derby, Ellett, Howard, Berens and now by Dr. Green. Abroad it has been advocated particularly by Elschnig and Barraquer. Should the conjunctival suture be made before or after the incision? My own feeling is that it is better made before the eyeball is opened. This is particularly true if it is intended to cover most of the wound. Should we strive to obtain both advantages of the suture or content ourselves with a small flap to offer security and rapid healing? Much as I appreciate the marvelous healing and protective properties of the conjunctival covering for wounds, my preference would be for a small flap at the apex of the incision, as advocated originally by Verhoeff. In regard to passing the sutures through the fixation forceps with traction by an assistant, it would also seem that the simple act of laying them to one side, as practiced by Verhoeff, would be more advisable. I myself would be influenced in my choice of a technic for conjunctival suture by my desire to incorporate in it a safeguard with which I have had some considerable experience and of which I have become an enthusiastic advocate. I refer to the bridle suture through the superior rectus. This suture affords throughout the operation the well known advantages of the Angelucci fixation by means of the superior rectus muscle. It has been recommended by Elschnig, and was recently indorsed warmly by Axenfeld. The suture is held by the assistant with the same hand that uses the lid elevator for the upper lid. It can, of course, be used with a speculum and can be controlled when desired by the operator. From my experience with the bridle suture, I can substantiate the statements of Axenfeld, who says that it affords increased control of the eye, that it diminishes the pressure in the vitreous and the tendency of the wound to gape, and that it is an excellent safeguard against vitreous prolapse.

Dr. George S. Derby, Boston: Not very long ago, I asked the house surgeon at the Eye and Ear Infirmary in Boston to look up some of our recent cases of cataract extraction, and he looked up 150 cases, covering a period of about a year and a half, and to these I added fifty cases covering about the same period of time. The first fifty-two patients were operated on by nine different house surgeons; the second forty-nine were operated on by four assistants on the staff; then there were forty-nine hospital patients operated on by myself, and fifty private patients. In that series of cases there were only four in which vitreous was lost, or 2 per cent. There were three losses of vitreous in the hospital cases and one in my own 100 cases. As a matter of fact the house surgeons, some of whom were doing their first cataract extraction on the human eye, lost vitreous but once. It seems to me that, in view of these figures, there must be something in the technic that we use that is superior to Dr. Green's technic. This condition depends on three things: First, paralysis of the orbicularis muscle by injection of procaine in every case. Second, complete anesthesia of the eyeball, which cannot be produced by simply instilling cocaine into the eye. The orbital injection of procaine gives practically perfect anesthesia. Third, the scleroconjunctival stitch. In regard to Dr. Green's stitch, I do not think one can strictly call that the Verhoeff suture because the principle of the Verhoeff suture is that with a short conjunctival flap the suture is put into the sclera near the corneal margin and the wound is clamped down so that it cannot open. With a stitch such as Dr. Green describes, the conjunctival flap is long and the natural elasticity of the conjunctiva is sufficient, so that if the vitreous comes into the wound it can certainly stretch the flap. Also it seems to me that it is not desirable to have as large a flap as that, because bringing it down as Dr. Green has said makes it more difficult to see where the knife is going in making the corneal incision.

Dr. H. W. Woodruff, Joliet, Ill.: There is scarcely a single step or modification of any of the various procedures for cataract extraction that may not be open to discussion. Even those procedures which are designed to make the operation more safe may in themselves be an extra hazard. The operator who originated the idea of making the incision, cutting the capsule and cutting the iris with the cataract knife alone had certainly some advantage—he made the operation exceedingly short, and in this way it might be considered a procedure of safety. A few years ago I suggested a procedure which I called a safety procedure, especially designed for cataracts in which it was expected that there would be trouble during the extraction. I do not complete the scleral incision at first, but leave a small bridge of sclera, which is completed with scissors after the speculum is removed. Regarding the preliminary iridectomy, I believe that this is certainly advisable in cases of cataract complicated by simple glaucoma. First the tension is reduced by a deep iridectomy, and the lens is extracted later.

Dr. E. C. Ellett, Memphis, Tenn.: In conclusion no. 8, Dr. Green says: "The toilet of the wound can be carried out leisurely and effectively even after vitreous loss." That is the greatest advantage that pertains to some form of suture after cataract extraction. One can at one's leisure remove all the cortical débris, etc., and certainly nothing so promotes rapidity of healing, and nothing so greatly reduces the incidence of secondary cataract.

Dr. Meyer Wiener, St. Louis: I have the greatest respect for Dr. Woodruff's opinion, especially in surgery, but I would take issue with him in the statement he made in regard to the size of the incision. In my experience, the larger the incision the less danger of loss of vitreous, because with a large incision there is less pressure required to express the lens and consequently less danger of loss of vitreous. If the incision comes out considerably beyond the limbus, there is danger, because one is getting beyond the limit of the vitreous membrane. I think the closer one keeps to the limbus the less danger there is of loss of vitreous. I do believe that the incision should be large, and I would much rather have it too large than too small.

Dr. Walter B. Lancaster, Boston: As I witness operations, my own and others, it seems to me that the accidents that happen, the things that go wrong, are more frequently due to imperfect anesthesia, to the fact that the patient continues to make some reaction to it, than to anything else. The matter of vitreous loss has been such a small factor in my experience that I hesitate to use a stitch. Vitreous does not come out of the eye until it is pushed out; it will not run out of the eye. The eye is like a rubber ball—it can be compressed—and that is the reason for closing the eye immediately if the vitreous does prolapse. The elasticity of the sclera causes it to suck in a little, and if there is a little prolapse the wound draws in, and coapts properly. I cannot see why more operators do not use a speculum that covers the whole length of the eyelid. Why have a speculum that leaves all this exposed? It is simple to have a speculum with a flap that covers all that, and one can use forceps, triangular keratome or sutures, and they do not touch the lid. Moreover, if there is a wound and one takes out a speculum of the first type, one is pulling the eye across the wound and may catch it and pull it open. But if one is pulling a flat plate across the wound, there is no such danger. There may be some objection to it, but if any one objects to it I should like to have them say why. I have used it for a long time and advocate it.

Dr. Albert N. Lemoine, Kansas City, Mo.: I would emphasize the value of subconjunctival incisions as used by Dr. Green in his keratome incision. In my experimental work, in which I did a great number of decisions on guinea-pigs and rabbits, the incidence of infections was from 10 to 15 per cent when I used the corneal incision; but after adopting the subconjunctival incision, I had only one infection, which would lower the incidence to about 2 or 3 per cent.

Dr. John Green, St. Louis: Dr. King very properly makes the point that it is far easier to fashion a flap of desired size and dimensions if the flap is prepared prior to section. No matter how skilful the operator may be, he cannot always foretell the size and shape of the flap that will be made by the Graefe knife on completing the 'section. Since using downward traction by means of the second pair of fixation forceps, it is easy to see where the knife is coming out, so that the incision need not be too peripheric. I think it ought to be a little back of the sclerocorneal margin. The flap tends to assume a triangular shape, so that the only portion of the field that is obscured is that portion occupied by the gap in the iris. There is no likelihood that the knife will catch on the iris, and the points of entrance, exit and emergence are constantly visible. I am greatly indebted to Dr. King for drawing my attention to the "bridle" suture. There is no reason why this suture should not be used, and it may prove to be an additional safeguard. The percentage of vitreous loss is admittedly high. I cannot account for it on the basis of deficiency in technic, inadequate anesthesia or failure to splint the orbicularis. I suspect that a given series of cases will, without rhyme or reason, present a higher percentage of vitreous loss than another series, in both of which the same technic is employed. In no case was the loss excessive and in none was healing impaired. I cannot agree with Dr. Derby that my suture is not the Verhoeff suture. It is inserted transversely in the episclera and brought out through the conjunctival flap in the manner described by its author. The only difference is that it is inserted a little higher. The flap, of course, is very different from the small triangular flap described by Verhoeff and pictured by Howard. Dr. Woodruff speaks of a small scleral incision which is enlarged with scissors as a safeguard against vitreous loss. I agree with Dr. Wiener that a large primary incision is one of the safeguards against serious loss of vitreous. One great advantage of any suture, as Dr. Ellett states, is that it enables one to complete the operation with proper toilet even after vitreous loss. The improvement in anesthesia spoken of by Dr. Lancaster is very important. I feel that it is unnecessary to use an intra-orbital injection of procaine, but I use it subconjunctivally and allow a sufficient time to elapse so as to secure complete anesthesia of the iris. It is interesting to learn from Dr. Lemoine that a conjunctival flap proved a distinct safeguard against infection in the eyes of rabbits; my conviction is strengthened that, as far as possible, all intra-ocular operations should be performed under such a flap.

THE RETENTION OF VEGETABLE MATERIAL IN THE STOMACH

REPORT OF CASE *

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SAN FRANCISCO

The retention of vegetable material in the stomach, except in cases of complete obstruction of the pylorus, is rare. Perhaps the earliest case is the one reported by Quain [1] (for Buckwill) in 1854. The largest series is one of eight cases reported in 1923, by W. E. Hart.[2] Single cases have been reported by Schreiber,[3] Peple,[4] Outten,[5] King,[6] Tschassownikoff,[7] Upson,[8] Adams [9] and others. The cases reported have all been compact masses of vegetable matter and removed as such. Six of Hart's cases were composed largely of persimmon, Adams' case entirely of pumpkin, and the others of various vegetable fibers. Two of Hart's cases were complicated by gastric ulcers. In the other cases no organic lesions were demonstrable.

In the case here presented there was no history of the eating of persimmons; the retained matter was composed of celery fibers, prune and raisin skins, and other cellulose material which could not be identified. The mass was soft and loose and had to be removed with a spoon and by sponges on a sponge stick.

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* Read before the Section on [illegible] the Seventy-Seventh Annual Session of the Amer[illegible] Dallas, Texas, April, 1926.

[1] Quain (for Dr [illegible] of an Insane Patient Filled with Coconut Fiber [illegible] Caused Death by Perforation, Tr. Path. Soc. London **5:** 145 (May 16) 1854.

[2] Hart, W. E.: Phytobezoars, J. A. M. A. **81:** 1870 (Dec. 1) 1923.

[3] Schreiber, J.: Ueber einen Phytobezoar in Magen einer Frau und essen Diagnose, Operation und Heilung, Mitt. a. d. Grenzgeb. d. Med. u. Chir. **1:** 729, 1892.

[4] Peple, W. L.: Globus Diospyri Virginionae Seminum: Report of a Case, Virginia M. Month. **48:** 596 (Jan.) 1922.

[5] Outten, W. B.: A Case of Double Gastrolith Removed by Gastrotomy; Recovery, M. Fortnightly **6:** 445, 1894.

[6] King, H. P., cited by Outten (footnote 5).

[7] Tschassownikoff, P.: Phytobezoar, Deutsche med. Wchnschr. **50:** 1480 (Oct. 24) 1924.

[8] Upson, W. O.: Roentgenological Findings in a Case of Phytobezoars, Radiology **4:** 49-51 (Jan.) 1925.

[9] Adams, Wilmot: Case of Vegetable Material Simulating Carcinoma of the Stomach, Brit. J. Surg. **13:** 189 (July) 1925.

REPORT OF CASE

A. R., a man, aged 55, a native of India, entered the San Francisco Hospital in the medical service of Dr. Le Roy H. Briggs of the University of California in Dr. Gordon E. Hein's ward, July 30, 1925. The family history was negative. The past history was uneventful so far as concerns the present illness. The bowels tended to diarrhea. The patient never had constipation. Urination was frequent and with large amounts. The appetite was good. The patient slept well. He weighed 82 pounds (37 Kg.). He thought his normal weight was about 100 pounds (45 Kg.).

Up to three years before, the patient had been very well. About that time he began to feel some abdominal distress, at first after meals and later constantly. It was characterized by a feeling of fulness and lightness, relieved somewhat by belching. There was occasional vomiting. At the same time there was a dull pain in the epigastrium and across the abdomen but not referred to the back or shoulder. The stools had always been formed and never tarry or clay colored. He had had diarrhea at times, sometimes six or eight stools in a day. He had never been jaundiced.

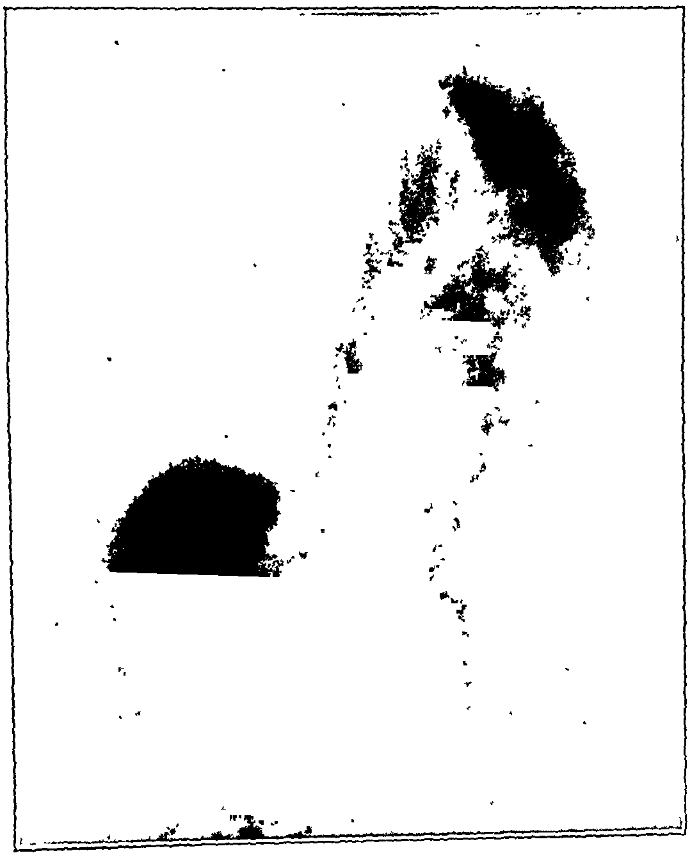

Fig. 1.—Vegetable material in the stomach.

The general examination was negative except for the following points: The abdomen was not distended or markedly scaphoid, but there was considerable evidence of wasting. There was no visible peristalsis. The liver was felt two finger breadths below the costal margin on deep inspiration. No other organs or masses were felt. Two large para-umbilical veins coursed to about 2 inches (5 cm.) above the umbilicus, where they disappeared. No tenderness was definitely elicited.

August 1, Dr. Edwin Bruck found visible intestinal peristalsis. The liver and spleen were palpable. The Achilles and knee jerks were absent.

August 5, Dr. Hein found marked clubbing of the fingers. The knee jerks were absent.

August 7, eye examination showed arteriosclerosis of the ocular vessels.

August 18, an Ewald meal was given. The highest free hydrochloric acid was 30. The highest total acidity was 90. There was no lactic acid.

August 24, the blood sugar (fasting) was 301 mg. per hundred cubic centimeters of blood.

September 15, esophagoscopy was attempted but was unsuccessful.

September 18, gastrotomy was done under a local anesthetic by Dr. Harold Brunn, with removal of foreign material. The stomach was large and atonic, and seemed to be filled with a boggy mass of foreign material. The gastric wall was carefully incised along its anterior surface for a distance of 2½ inches (65 mm.). With a spoon and sponges on sponge sticks, a large quantity of cellulose and other bits of undigested food material was removed.

September 18, it was reported that the patient ate chocolates during the night.

September 26, the stomach was washed. Three liters was given by stomach tube, without any return.

October 11, the blood sugar was 204 mg.

The blood sugar varied from 126 to 304 mg. per hundred cubic centimeters of blood. The Wassermann reaction of the blood was negative. The urine continually contained a large amount of sugar, but no acetone or diacetic acid. A blood count revealed: 80 per cent hemoglobin; red cells, 4,480,000; white cells, 5,880; polymorphonuclears, 52 per cent; small lymphocytes, 38 per cent; transitionals, 7 per cent; eosinophils, 2 per cent; basophils, 1 per cent.

It was impossible to get the patient sugar free, as he would not obey rules. He was transferred to the relief home in October, and reported back to the hospital for examination. Three months after the operation the roentgen-ray examination showed a normal appearing stomach. The general condition of the patient remained stationary. At the first roentgen-ray examination the appearance of the stomach was such that we assumed that the patient had not abstained from breakfast, and he was returned to the ward with special instruction as to his fasting the next morning. At the second examination the fluoroscopic appearance of the stomach was unchanged. On the third day he was again brought to the roentgen-ray department, fasting all night and after a thorough gastric lavage under the direction of Dr. Hein. At that time the stomach appeared as shown in figure 1. The opaque material showed an irregular network structure of alternating areas of opacities and nonopacities which could be changed by palpation. The stomach was large and atonic, and there were no defects in the gastric outline. The pylorus was smooth and patent, and the duodenal bulb large and smooth. There was a two-thirds six hour barium gastric residue and a large twenty-four hour opaque residue. The conclusion from the roentgen-ray examination was: retained foreign material in the stomach.

At operation, aside from the retained vegetable material in the stomach no lesion was found. The pylorus was smooth and wide, admitting two fingers readily. Three months after the operation the roentgenogram of the stomach was normal and there was no six hour gastric residue. This case is of particular interest on account of the diabetic condition.

COMMENT

Dr. Hilmar O. Koefod[10] of Santa Barbara cites a case of a boy, aged 6 years, who had had severe diabetes for two and a half years. This was in the preinsulin period and his diet was made up largely of vegetables low in carbohydrates. The boy died from an intestinal obstruction from a large bolus of coarse vegetables in the lower ileum.

Aside from these two cases I have been unable to find any report of vegetable retention in diabetic patients. However, it would seem that in cases of epigastrium pain associated with diabetes this condition should at least be considered. The diagnosis is readily made by a careful roentgen-ray examination.

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[10] Koefod, H. O.: Personal communication to the author.

In differential diagnosis, polyposis and true phytobezoars are the only conditions that may be confusing. In polyposis there is always bleeding and the typical roentgen-ray picture of finger-like indentations extending into the opaque mass usually from the greater curvature. In true phytobezoars there is a hard, smooth, movable mass which displaces the opaque mixture and into which the mixture does not penetrate.

SUMMARY

Retention of vegetable material may occur in the stomach without forming solid tumor masses.

It may be associated with diabetes.

135 Stockton Street.

ABSTRACT OF DISCUSSION

Dr. W. W. Watkins, Phoenix, Ariz.. In San Francisco, at the time the American Medical Association met there, we had on exhibition a film of hair-ball of the stomach. The patient was operated on shortly after, and I have brought the specimen that was removed from the stomach. It is the ordinary type of hair-ball. This girl was 15 years old and came for examination for suspected ulcer of the stomach. My associate, Dr. H. P. Mills, in 1911, reported the case of an insane woman who was seen by the hospital attendants to pick up objects from the floor. No one suspected that she was swallowing them. She never had any trouble with her stomach. She died. At the necropsy 1,446 objects were found in her stomach, including, among other things, 148 small seeds and 7 prune seeds; 453 nails; 42 screws; 9 bolts; 5 teaspoon handles; 1 nail file, 3½ inches long; 3 pieces of steel; 5 thimbles; 2 salt shaker tops; 63 buttons; 105 safety pins; 115 hair pins; 52 carpet tacks; 136 common pins; 16 large white-headed pins; 37 needles; 7 broken coat rack hooks; 1 string of beads 4 feet long; 7 large loose beads; 85 small stones and pieces of glass; 54 pieces of metal, and 19 hooks and eyes. However, none of these articles produced any symptoms of which the patient complained. Her appetite was good and apparently digested food well. The stomach was very fibrous and the wall thickened, but it is the most striking illustration of the ability of a stomach to retain foreign material without symptoms being manifested that has ever come to my attention.

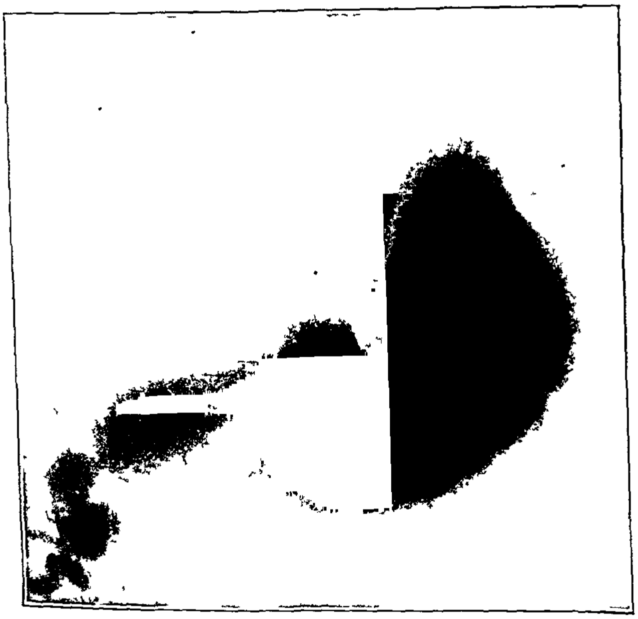

Fig. 2.—Stomach normal, two months later.

Dr. Lloyd Bryan, San Francisco: In stomachs retaining foreign bodies there may be a slight amount of retention of vegetable fibers.

PSEUDOHYPERTHROPHIC MUSCULAR PARALYSIS

PRELIMINARY REPORT OF A CLINICAL STUDY OF THIRTY-NINE CASES

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CHICAGO

This condition is variously known as pseudohypertrophic muscular paralysis, progressive muscular dystrophy, or iodiopathic muscular atrophy. Myopathies are primary diseases of the muscular system characterized by weakness and wasting (with or without an initial enlargement) of the muscles, and not due to a primary lesion in the nervous system.

Barnes classifies the myopathies as:

A. True myopathies:
   1. Pseudohypertrophic muscular paralysis.
   2. Juvenile type (Erb).
   3. Facioscapulohumeral type (Landouzy-Dejerine).

B. Allied types:
   1. Distal type (Gowers).
   2. Myotonia congenita (Thomsen).
   3. Hypertrophic musculorum vera (Spiller).
   4. Transition types.

C. Type sui generis:
   1. Amyotonia congenita (myotonia congenita of Oppenheim).

Sachs' classification of primary dystrophies is as follows:

	Muscular Pseudo-hypertrophy	Juvenile Form of Progressive Muscular Atrophy (Erb's Type)	Landouzy-Dejerine Type, "Infantile Form"
Part first affected	Legs (calves)	Shoulder girdle	Face and shoulder girdle
Distribution of hypertrophy	Calves (rarely thighs)	Muscles around shoulder and pelvic girdles	None
Distribution of atrophy	Thighs; deep muscles of back; shoulder and scapular muscles Calves during later period, at which time also general atrophy	Thighs; deep muscles of back, upper arm Hypertrophied parts may become atrophic in later stages	Face muscles, including lips and orbicularis palpebrarum Shoulders and scapular muscles
Parts remaining normal	Face, forearm and hand, except in last stages	Face, forearm, hand and leg muscles except in last stages	Forearm, hand leg and deep muscles of back

According to Naccarati, there are the following types:

Infantile type of Werdnig-Hoffman, due to degeneration of the lower motor neurons.
Juvenile type, or scapulohumeral type of Erb.
Facioscapulohumeral type of Landouzy-Dejerine.
Pseudohypertrophic paralysis of Duchenne.
Hereditary type of Leyden, Moebius.

These types may be various manifestations of the same entity.

Generally speaking, if definite pseudohypertrophy occurs especially in the lower extremities, it is a case of pseudohypertrophic muscular paralysis. If the face is affected early, it is a case of the facioscapulohumeral type of Landouzy-Dejerine. Other cases belong to the juvenile type of Erb.

Various theories of the causation proposed are those of defective vital endurance. Collins said it was an expression of prenatal inadequate endowment, and Barker believes that the cause is in the germ plasm.

The condition may appear at any time from birth to 30 years. Oppenheim reportd a case in a man, aged 58.

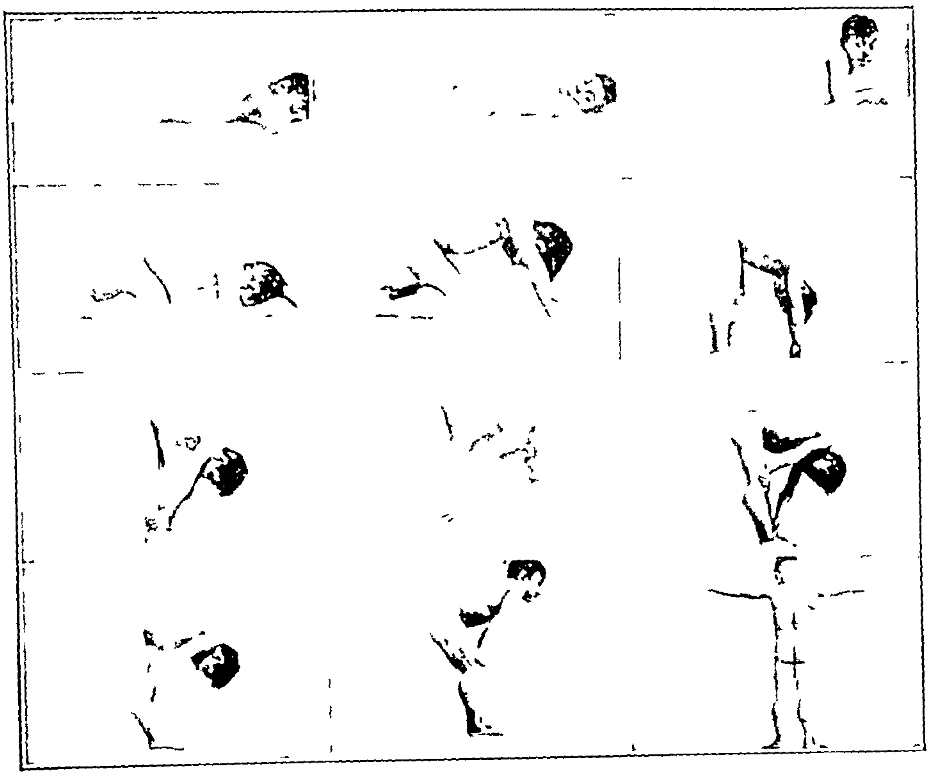

Fig. 1.—Typical method of rising from the supine position; powerful musculature may be noted.

It is much more common in males than in females. Church was shown by Charcot a woman, aged 35, with this condition. Porter says that he has seen but one case in a female. Janney, Goodhart and Isaacson had one adult female case in a series of nine. In this report of thirty-nine cases, nine were in females. In my first fifteen cases, there was but one female.

The condition is said to be transmitted through the females to the males. Paternal heredity is probably not a predisposing cause. Two of my patients had brothers who died of this trouble.

Nationality is unimportant. One of the patients in this series is a Chinese boy.

In one of the cases here reported, the patient is a colored man.

It is worthy of note that in practically every case of this series, the patients have been very poor.

It is undoubtedly true that many cases are more severe after an acute infection; i. e., the infection aggravated a preexisting condition.

Metabolism is the most important factor—muscle metabolism—and it is probably from this angle that more light will be thrown on this condition than from any other—the cause of the disturbed muscle metabolism.

ENDOCRINE DISORDER

Timme believes that the pineal shadows seen in the roentgenograms are proof of the causative factor. He observed five cases in a family in which there were fourteen cases. Four of the five showed pineal shadows. He did not examine the other nine. He reports cure in two cases and a definite improvement in four cases. He believes that one half of all cases have pineal shadows. Normally after 25 years of age, a shadow is seen in 2 per cent of skulls. In persons over 50, all show shadows. He states that all patients under 20 having a pineal shadow almost invariably have muscle weakness. He advises three or four different lateral views in the roentgenograms. I have not been able to see any pineal shadows in the films of my own cases, or in the reproductions of Timme's.

Janney, Goodhart and Isaacson found pineal shadows in two of nine cases. They, as well as McCrudden, believe that the disease is an endocrine dysfunction affecting carbohydrate metabolism.

Gibson, Martin and Buell believe that endocrine disturbance in this condition is indicated by the hereditary character of the condition; the metabolic abnormalities; the occasional improvement at puberty when glandular readjustments occur; the improvement following endocrine therapy, and the development of the disease in polyglandular dystrophies, especially in association with dystrophia adiposogenitalis.

McCrudden believes that the hypoglycemia and fatty infiltration are due to impaired glycogenesis. It is possible that the carbohydrates of the food are changed largely into fat instead of glycogen, and that this impaired glycogenesis is due to suprarenal or other endocrine disorder.

It is my belief that the same etiologic factor is responsible for the endocrinopathy as for the muscular dystrophy. I incline to this view, first, because of the very definite improvement that I have seen in several cases in this series under epinephrine given hypodermically and hypodermic tablets dissolved under the tongue and, secondly, because of the associated glandular dystrophy in several of my cases. Many of the other cases may be definite glandular types as yet unclassified accurately.

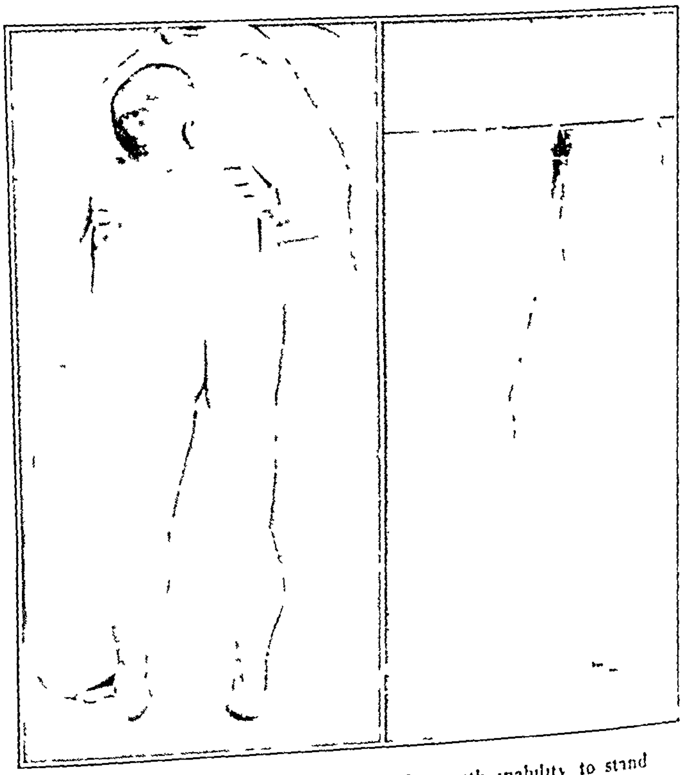

Fig 2.—Powerful looking calf muscles, with inability to stand

The situation seems to be analogous to one in which there is a coal bin that has a poor supply of coal, the coal is of poor quality, and the furnace is not in good enough condition to burn the coal in order to obtain the maximum heat.

PATHOLOGY

Erb believed that the muscle changes were due to trophic disturbances. In spite of this, there are no demonstrable primary lesions in the nerves or spinal cord. Gowers did not believe that it was a trophoneurosis. Brooks found cells in the dorsal ganglions shrunken. Friedman believes that the lesion is at the neuromuscular junction.

In the muscle there is hypertrophy of individual muscle fibers followed by atrophy with loss of transverse striation, splitting, vacuole formation, increase of muscle nuclei, and fatty degeneration with increase of fibrous connective tissue.

It is a complex degenerative atrophy. Hypertrophic and atrophic fibers are found in the same muscle, the number of the latter gradually increasing until the whole muscle is more or less completely degenerated.

The increase of size in some of the muscles at first is due in part to actual hypertrophy, but later entirely to pseudohypertrophy depending on the increase of connective tissue and infiltration by fat, the degree of each of these varying with the group of muscles involved. Although the degeneration is attended by hypertrophy, the end-result is atrophy.

Dr. J. J. Moore, who examined muscles removed from two cases in this series, reported various changes in the muscles, from areas of greatly enlarged muscle fibers to those in which the fibers were small and atrophic, with an apparently increased number of nuclei. Fissuring of the fibers was common. Where the fibers were greatly decreased in number and atrophic, the connective tissue was increased, and here were found from a few to a large number of fat cells producing the pseudohypertrophy. Round cells were numerous between the fibers in certain areas.

After a very careful study of the same material, Dr. G. B. Hassin concluded that the muscle tissue was replaced by connective tissues which harbored the fat.

SIGNS AND SYMPTOMS

The history is very important. It usually consists of a story of delayed walking, sometimes till the third or fourth year. Tiptoe walking is the rule. There is an awkward, waddling, unsteady gait with inability to go up and down stairs. These children fall frequently and may be unable to rise without assistance. The onset is gradual, with increasing weakness. They tire easily.

Examination of the nude patient reveals marked lordosis, which is compensatory and secondary to the hip flexion, which is due to weakness of the hip extensors. This lordosis is not "fixed," because it disappears (or might become a kyphosis) when the patient sits.

A protuberant abdomen is the rule, as are enlarged, firm calf muscles. There is a myopathic facies, dull and masklike, with inability to elevate the angles of the mouth, causing the "rire en travers," or transverse smile (facial type) "tapir mouth." There may be difficulty in closing the eyelids. The gait is waddling and awkward. The feet are wide apart and are sooner or later in a position of equinus. They are swung forward rather than lifted, and are carried high to clear the ground of the toes, because of weakness of the anterior tibial group of muscles. It appears to me that it is a combination of the "steppage" gait plus the gait of a pregnant woman. The child sways from side to side. With the weight on the left leg, he inclines to the left to keep the center of gravity over the left acetabulum; as the weight goes to the right, he sways to the right so that the center of gravity is over the right acetabulum.

He cannot sit down slowly; he collapses into the chair unless he uses his arms and hands to break the fall. Winged scapulae (scapulae alatae) are due to muscular atrophy. The "wasp" waist of Marie is due to the vertical direction of the lower ribs and contraction of the waist at this level.

"Loose shoulders" cause the "slipping through" when an attempt is made to pick him up from the axillae. His head telescopes into the thorax, because of weakness of the serrati, pectorals and latissimus dorsi muscles. There is inability to go up and down stairs; or, if he can, he does so clumsily. Stumbling and falling are very common. If he can rise from the floor from the supine position he does so in a classic way; viz., he turns over on his face, rests on his elbows and knees, and climbs up his legs by putting the hands on the ankles, then the legs, then the knees and thighs, and by a supreme effort stands up. This is due chiefly to weakness of the glutei, the quadriceps extensor and the erector spinae muscles. The shoulder and arm groups of muscles may be affected. Gowers says that the supraspinatus is the last to be affected. Collins and Climenko give the following order in which the muscles are involved: dense, thickened muscles: calves, sartorii, glutei, triceps, deltoids, infraspinati.

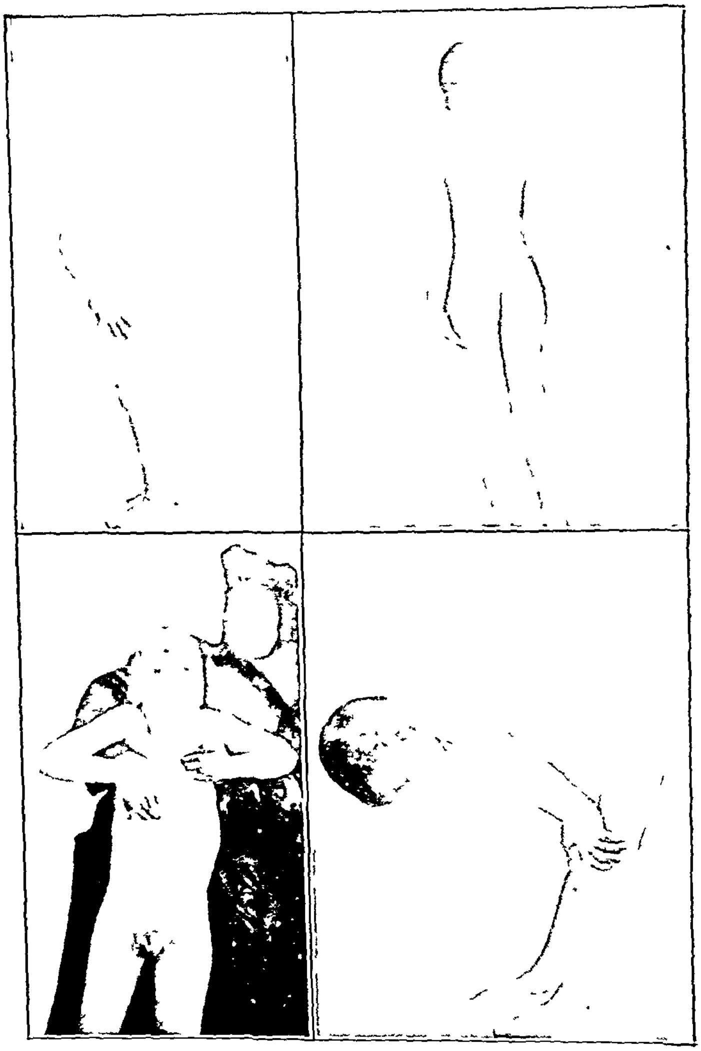

Fig 3.—Increased lumbar lordosis; prominent abdomen; scapulae alatae; weakness of shoulder girdle.

There is atrophy of the pectoralis major, trapezius, serratus magnus (anterior portion), latissimus dorsi, biceps, quadriceps femoris, and abductors.

The tendon reflexes are at first unchanged; later they grow less active and at last disappear. The superficial reflexes may be unchanged. Fibrillary contractions may occur. There is lessened excitability to both electrical currents, but no reaction of degeneration. Sensation is normal, and sphincter action is normal.

Mentality is normal, with frequent exceptions. In six cases of this, the patients were subnormal. One must be careful in distinguishing between mental deficiency and deficient training or education.

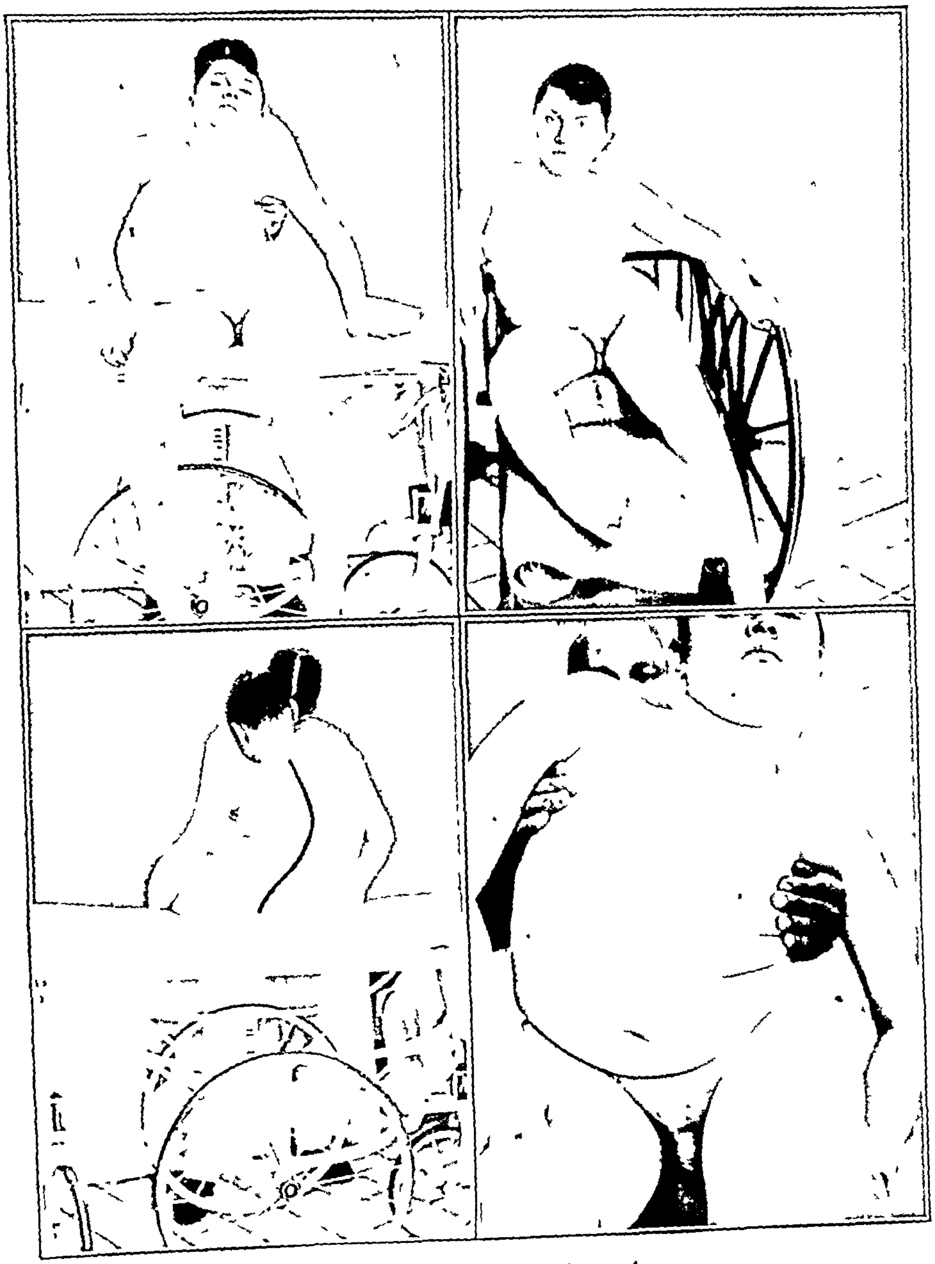

Fig 4 —Adiposogenital dystrophy.

The urine shows a marked decrease in preformed creatinine, with an unusual amount of creatine. The blood shows the creatine content normal, but creatinine is low. There is a definite hypoglycemia with delayed glucose utilization, as shown by the hourly blood sugar curve. Altered sugar tolerance is found.

Janney, Goodhart and Isaacson found underdevelopment with rarefaction of skull and long bones. They found pineal shadows in two cases. One case showed acromegalic changes.

ASSOCIATED CONDITIONS AND COMPLICATIONS

Contractures are the most important They usually involve the Achilles tendon, the flexors of the knees, and the hips. Scoliosis may develop from habitual postural causes. One patient in the present series had frequent pathologic dislocation of one shoulder, always from a slight cause. Ordinary fractures and dislocations were not found in this series. It is probable that these children do not indulge in the hazards of the ordinary child and therefore are less liable to injury. Moreover, when they fall, they "fall in a heap" and rarely suffer severe injury.

One patient showed generalized amyotonia. Adiposogenital dystrophy was found in four cases in this series: three in males and one in a female. Ober saw one patient that was typically acromegalic.

Intercurrent disease is the usual cause of death.

DIAGNOSIS

The direct diagnosis is based on a good history, with especial reference to the important points mentioned under symptoms plus a good physical examination with the patient nude.

The differential diagnosis is usually not difficult. The most important conditions with which it is confused are:

Tuberculosis of the spine, which shows muscle spasm, limitation of motion, pain and tenderness; limp if the psoas muscle is irritated; military attitude; night cries; deformity, and positive roentgen-ray findings.

Infantile paralysis, with a history of a definite attack with fever, gastro-intestinal disturbance, etc., with paralysis, usually of the flaccid variety. No hypertrophy, but rapid atrophy. There is a regular distribution of affected muscles corresponding with the portion of the cord affected. This is not true in the dystrophy. In Boston, in 1921, I saw a girl of 10 in whom the differential diagnosis between these two conditions could not be made on the first examination.

Congenital dislocation of hips, with its history of late walking, lordosis and waddling gait. Palpation fails to detect the head of the femur in its normal position and does find it out of the acetabulum. No muscle weakness is found, and roentgen-ray examination shows the dislocation.

Rickets. There is a definite condition known as the pseudoparalysis of rickets, which is accompanied by the findings so characteristic; viz., enlarged epiphyses, pot belly, and deformity of the long bones, such as genu varum, genu valgum, and anterior bowed tibia. Other findings are the rachitic rosary, square head, and the alterations in blood chemistry. A history of malnutrition is always present.

Charcot-Marie tooth disease or progressive muscular atrophy, characterized by its familial nature and its usual origin in the muscles of the feet. There is wasting of the peronei, extensor digitorum communis, and small muscles of the feet. Talipes equinovarus is common; later the legs and arms may be affected. The "monkey" hand is found. Fibrillation may or may not be present, and there is incomplete reaction of degeneration.

Syringomyelia. This condition shows early involvement of the finger muscles. In dystrophy, the finger muscles are usually unaffected to the last.

Amyotonia congenita. Oppenheim's disease. During pregnancy there is not much "kicking" by the fetus. Examination reveals loose joints, no hypertrophy, no talipes equinus, but usually a valgus deformity, the so-called pad foot. A persistent thymus may be present. This is found by percussion and roentgenogram.

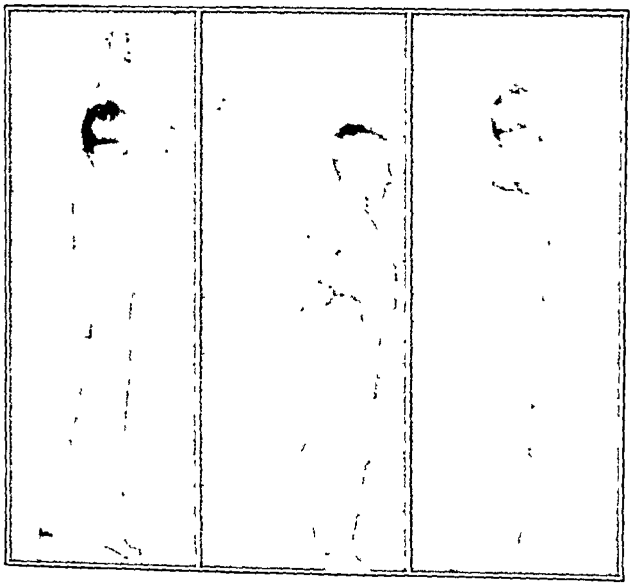

Fig. 5.—Marked relaxation of trunk, shoulder, girdle and arm muscles.

Myotonia congenita. Thomsen's disease. Heredity is very strong. (The disease occurred in four generations of Thomsen's family.) Examination reveals hypertrophy of the muscles in general. There is delayed relaxation of the muscle, and fibrillary contractions are present. Dystonia musculorum deformans is a condition manifested by a peculiar torsion of the pelvis and trunk, and should not be easily confused with muscl dystrophy.

Multiple sclerosis is characterized by intention tremor scanning speech, nystagmus, paralysis which is spastic, and increased reflexes.

Peripheral neuritis, in which there is a history of infection, and examination reveals the sensitiveness of the muscle itself. No paralysis is found.

Myasthenia gravis is easily differentiated by the limitation of the disturbance chiefly to the muscles of the jaw.

COURSE

The course is very slow. In the younger patients it is more rapid; after puberty, the disease advances slowly. Gradually more and more power is lost. The patient becomes chair-ridden or even bedridden. Wasting becomes more complete, and the pseudohypertrophy might disappear. He may be unable to do more than use his hands. The course may be from thirty to forty years. Remissions are common, and because of this fact various therapeutic measures have been accredited with remedial effect.

PROGNOSIS

As to life, the prognosis is poor, because of the frequency of death from intercurrent infection. The statement that death is usually caused by tuberculosis is open to considerable doubt. As to improvement, there is a fair chance; i. e., a remission. The rule is for cases gradually to go on to the stage of the patient's being chair-ridden until death, usually between the fourteenth and eighteenth years.

TREATMENT

Tonics are of value as tonics and have no specific action. Funston found calcium lactate of definite value. It should be given in very large doses.

The diet should consist chiefly of fresh fruits and vegetables. The animal proteins are probably harmful.

All the vitamins necessary can be obtained from a diet rich in fresh fruits and vegetables. The commercial products of vitamins are not advisable because proper food is sufficient. Parhon and Savini fed two children with extract of fetal muscle and reported improvement.

Until the relation of the glands of internal secretion to this condition has been more definitely worked out, not much can be hoped for by endocrinotherapy. However, when there are definite indications for specific glands, they should be given. The chief glands indicated seem to be thyroid, pituitary and suprarenal. It seems rational in those cases associated with dystrophia adiposogenitalis that pituitary should be given and in addition thyroid. Epinephrine seems to me to be of value and should be given hypodermically or under the tongue. The preparation that I use is the hypodermic tablets of 3/200 grain dissolved under the tongue three times daily. I believe that it produces a hyperglycemia and increases the glucose utilization.

According to Kramer,[1] epinephrine mobilizes stored glycogen. Normally an increase of sugar in the blood causes a drop in phosphorus and a drop in potassium. This is due to the fact that the muscles take up sugar and build it into a hexose-phosphorus compound that breaks up into glycogen. Then the phosphorus and potassium levels are restored. Janney recommends pituitary, but offers no promise of cure. In the administration of glandular products, attention to the hormonic signs is important, and the so-called intestinal reaction of Engelbach and Tierney looked for in the administration of pituitary glands. Timme outlines his treatment as follows: pineal substance, one-tenth grain (6 mg.) three times a day for three weeks out of five

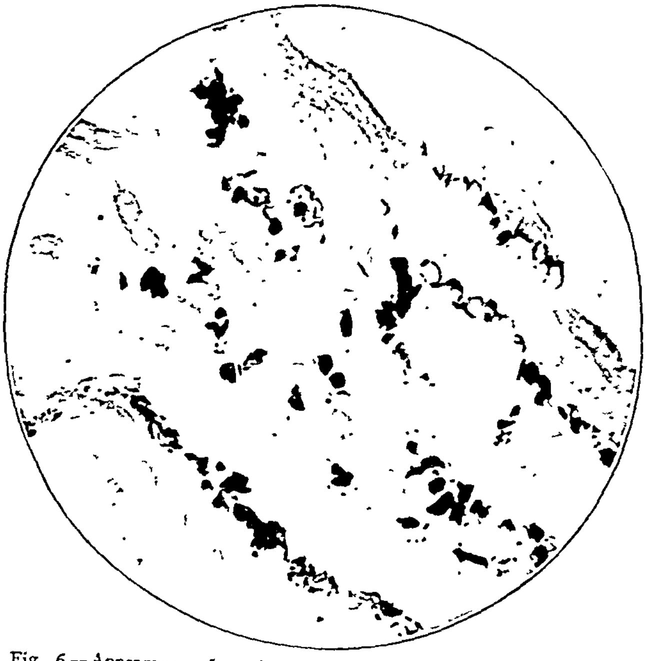

Fig. 6.—Appearance of section of muscle: fat and fibrous tissue and muscle changes.

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[1] Kramer: Personal communication to the author.

or six, then thyroid, hypodermically and by mouth, then pituitary extract in addition, and, as they grow older, orchitic substance. He reports cure in two cases and definite improvement in four.

The first warning is to avoid fatigue. Rest at the outset is advisable. Muscle education before a mirror is valuable. Electricity is of value in maintaining good tone and circulation. Massage is of some value. It should be carried out under the supervision of a skilled person. Osteopathy and chiropractic are to be avoided. Hydrotherapy should be of value. In order to teach these patients how to go up and down stairs, it is advisable to have built a set of five or six narrow stairs with a balustrade on each side.

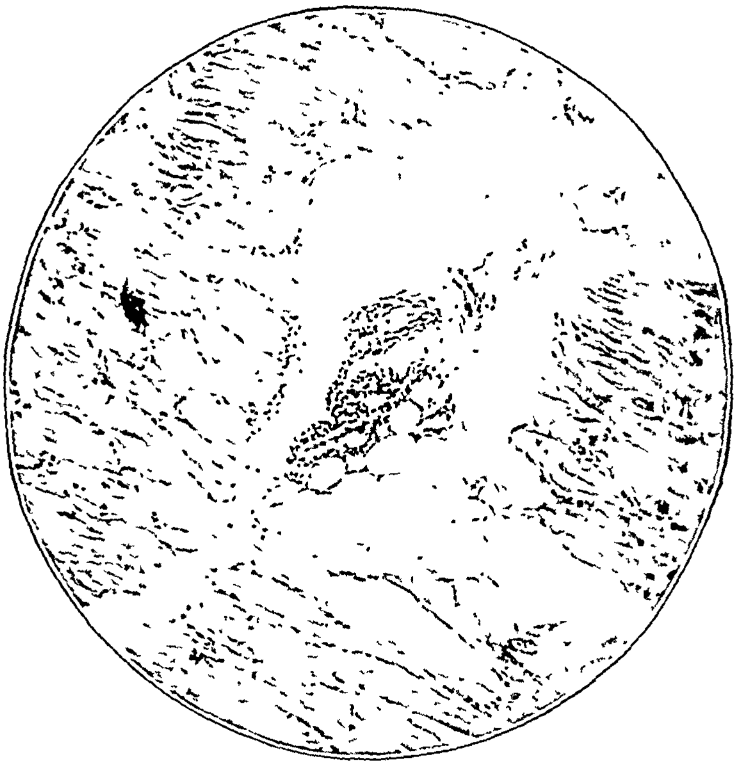

Fig. 7.—Round cell infiltration.

Retention apparatus, as a rule, is not highly beneficial because it does not strengthen the muscles. As a means of preventing contractures and deformities, it is advisable. For example, a light removable plaster cast or a brace may be used to hold a foot at right angles or a knee in extension or to support a scoliotic back. Braces aimed at correcting the lordosis are usually failures. The brace recommended by Owen of Louisville is of much value in helping the child rise from the floor. It consists of a light spine support with a piece coming off like a monkey tail. This is grasped by the patient as a support in rising.

Tendon lengthening and tenotomies should be carefully performed and only after careful study, because of the danger of losing what little tone and power the particular muscle has and the frequency of producing the opposite deformity, which might be more disabling.

One should not be misled by a temporary improvement during the first few months of treatment.

Erb and Mariano each report a cure in the case of a young girl at the time when menstrution occurred. It is possible that they saw the same case. Goldthwaite reported a cure in a man, aged 30. Timme reports two cures and four definite improvements. Levy and Rothschild had one patient who improved on pituitary extract. Funsten reported improvement in several cases.

In my series of thirty-nine cases there was marked improvement in seven, moderate improvement in three, slight improvement in three, and no demonstrable change in five; four were worse, and seventeen were lost from observation or untreated. One of the untreated patients died. Definite improvement was followed by relapse and at present a worse condition than ever in two. One patient, a boy with adiposogenital dystrophy was reduced 30 pounds (13.6 Kg.); another, a girl with the same condition, lost 25 pounds (11 Kg.). One girl was improved to the extent that at present the condition could not be diagnosed. One young man, who had used two crutches for six years, was able to walk unaided after ten weeks' treatment, and was later subjected to lengthening of both Achilles tendons, is able to walk long distances and is self supporting.

CONCLUSIONS

Pseudohypertrophic muscular paralysis is a progressive muscular dystrophy of unknown origin characterized by a pseudohypertrophy associated with marked weakness, manifested by exaggerated lumbar lordosis, waddling gait, "wasp waist," "loose shoulders," transverse smile, enlarged hard calf muscles, inability to go up and down stairs, and a classic method of rising from recumbent position; i. e., climbing up the legs. There are three definite types. The course is chronic and is subject to very little alteration. In the thirty-nine cases comprising this report, it is worthy of note that only ten were in females, and in nearly every case the patient was in very poor social circumstances.

It is my belief that the greatest progress in the understanding and treatment of this disease will come from careful studies along two lines; viz., carbohydrate-muscle metabolism and endocrinology.

The recommendations for treatment are: a diet rich in all vitamins, large doses of calcium lactate in milk, epinephrine hypodermically or hypodermic tablets dissolved under the tongue, physiotherapy, and muscle reeducation. One should not be misled by an early improvement in a case. At present it can be stated that the writer who called this condition a progressive dystrophy chose his words very well. We have here a direct challenge to the medical profession.

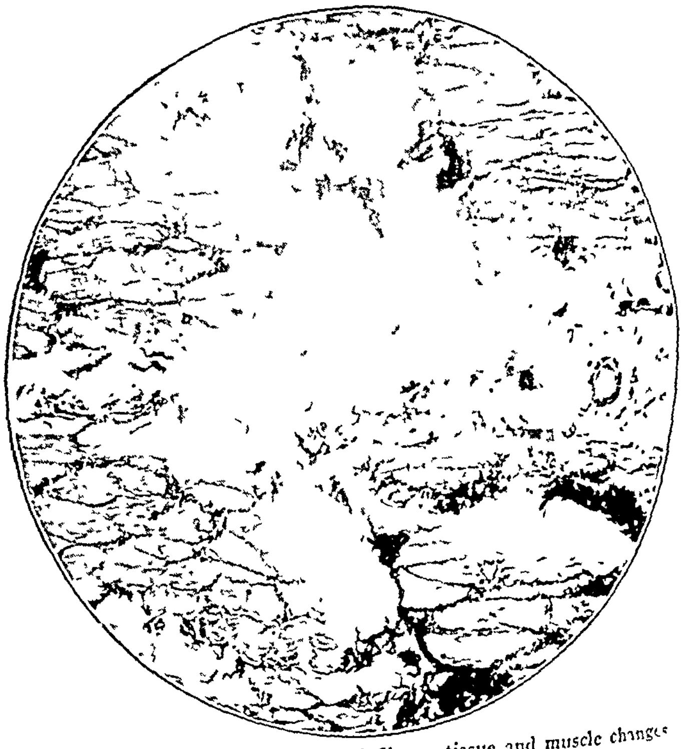

Fig. 8.—Muscle showing fat and fibrous tissue and muscle changes

104 South Michigan Avenue.

Clinical Notes, Suggestions and New Instruments

BLASTOMYCOSIS OF THE BLADDER *

B. W. RHAMY, M.D., FORT WAYNE, IND.

One may find an occasional yeast cell in pus or in noncatheterized urine, but so far as I am able to ascertain there is no reported case of blastomycotic cystitis. This case occurred in a physician, aged about 47.

In October, 1922, he had a cystitis, with *Streptococcus mucosus*, which lasted about a year, clearing up under autogenous vaccine and methenamine. During the night of May 5, 1925, he had a chill with rather marked malaise, weakness, a temperature of 101 F., and a moderate night sweat toward morning. During the next day, he had frequent urination with burning and tenesmus. This continued and, May 8, he submitted himself to me for examination, supposing the trouble to be a return of the former cystitis. Urine was passed in a sterile bottle after the meatus was washed with alcohol, and examined immediately, as the patient was from out of town and wanted a report before he went home. There was 1 per cent by volume of pus. Smears and cultures were made. In neither were found any of the ordinary bacteria, but the smears stained twenty minutes after urination showed large numbers of budding yeast cells, and the cultures showed pure colonies of yeast. Thinking this might be an accident in some way, he returned, May 11, and the examination was repeated with exactly the same result. A third examination was made, May 26, after treatment with iodine and salicylates internally. The urine showed marked improvement but still contained pus and yeast This organism grew freely on glucose agar, blood agar, Loeffler blood serum and bouillon. Sugar fermentation was about the same or showed even more than from bakers' yeast. The growth was scant on plain agar and plain gelatin. This organism showed elongated yeast cells not unlike brewers' yeast, and in bouillon cultures showed filaments. No terminal spores were found. It was gram positive. Guinea-pig inoculation was negative.

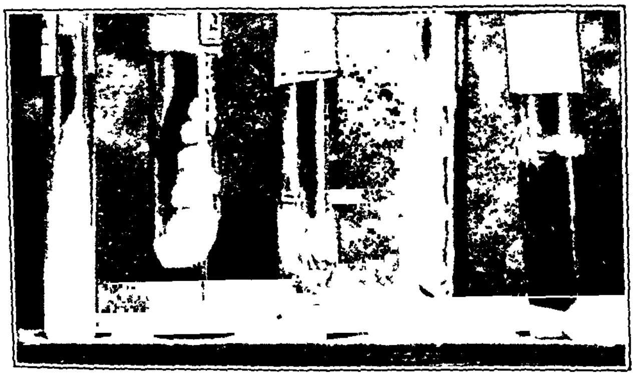

Fig. 1.—Pure cultures of yeast from urine sediment grown on Loeffler's blood serum, glucose agar, plain agar, blood agar and bouillon, May 8, 1925.

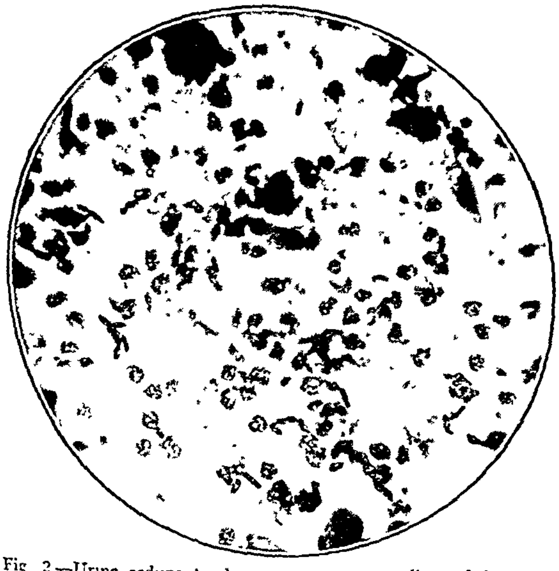

Fig. 2.—Urine sediment, showing many pus cells and budding yeast cells, May 8, 1925.

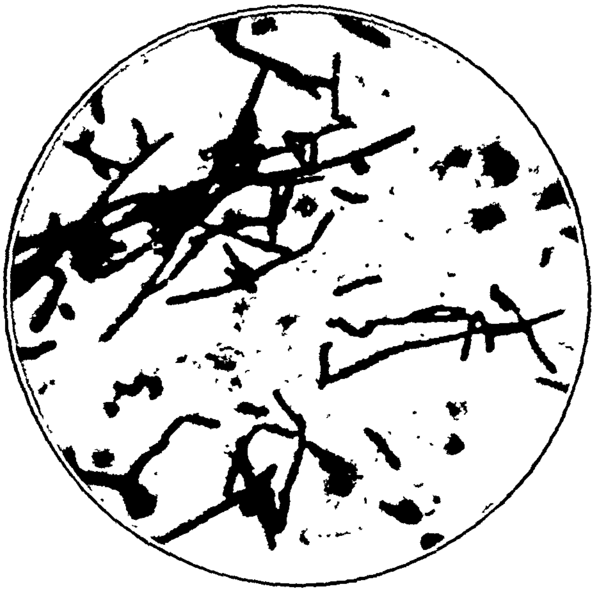

Fig. 3.—Urine sediment, showing few pus cells and yeast filaments, Dec. 23, 1925.

The patient had never had a glycosuria. Two years previously, he began eating two cakes of Fleischman's yeast each day, which was continued for about two months, after which he ate a cake about every two months. The last cake was eaten four or five weeks before the present trouble began. At the age of 13, he fell out of a haymow, landing astride a manger. He developed a stricture and had two operations and a cauterization. At the age of 15, he had bladder irrigation. Treatment of the yeast infection consisted first of iodine and salicylates internally, with improvement. Later, hexylresorcinol and methenamine were alternated. Under this treatment, improvement continued as outlined below, until only a trace of pus and a few yeast filaments remained. Neglect of treatment was followed by a relapse in September; the condition then improved rapidly under more active treatment.

Data of Urinalysis

Date	Appearance	Sediment	Bacteria	Treatment
10/ 4/22	Cloudy	Pus, 2% bulk	Streptococci	Autogenous vaccine and methenamine
2/ 2/23	Faint cloud	Pus, 0.25%	Streptococci	
9/20/23	Heavy cloud	Mucopus, 2%	Streptococci	Treatment resumed actively
4/ 6/24	Clear	None		
5/ 8/25	Marked cloud	Pus, 1%	Many yeast buds; no streptococci	Hexylresorcinol autogenous vaccine
5/11/25	Marked cloud	Pus, 1%	Many yeast buds	
6/11/25	Slight cloud	Pus, 0.5%	Many yeast cells	
6/18/25	Slight cloud	Pus, 0.25%	Moderate number of yeast cells	
8/21/25	Slight cloud	Pus; few cells	Trace of yeast	
9/21/25	Clear	Pus; occasional cell	Few threads	Treatment neglected after this
10/14/25	Slight cloud	Pus, 0.5%	Yeast buds numerous	Treatment begun again
12/23/25	Slight cloud	Pus, trace	Few yeast threads	

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* Read before the Fort Wayne Medical Society, May 25, 1925.

The definite biologic relationship of such budding organisms as *Monilia, Oidium, Torula, Coccidae* and yeasts or *Saccharomyces*, have not been determined, and they are all classed under a general head of blastomycosis. However, only *Saccharomyces* and *Monilia* produce gas.

CASE REPORTS IN LITERATURE

Busse, in 1894, reported a case of abscess of the tibia,which resulted in general infection and death. Curtiss, in 1895, described multiple tumors of the hips and neck resembling myxosarcoma, the yeast was pathogenic for rats, mice and dogs. Similar cases have been described with the lesions either of the skin or the lungs, the latter usually the seat of systemic infection. Jackson reported a case of ophthalmia in 1915. Buschke found yeast pathogenic to guinea-pigs in a cervical discharge. Tokischige, in 1895, described an epidemic in Japan of blastomycosis in horses; a similar epidemic occurred in Italy. Kartulis, in Alexandria, reported 100 cases of blastomycosis of the gluteal regions from ordinary yeast (*Saccharomyces hansenii*). Kessler, in 1907, described blastomycosis of the cheek in an infant. A case of yeast meningitis with a positive blood culture was reported at the meeting of the American Society of Clinical Pathologists at Philadelphia, May 23, 1925.

HEMOPHILIA WITH VOLKMANN SYNDROME: REPORT OF CASE*

John Prentiss Lord, M.D., Omaha

In January, 1926, a lad aged 16, consulted me about his hands and wrists, which were disabled. His history was that of a "bleeder," and he had had the usual experiences of such subjects. Slight cuts were serious and the bleeding hard to control. He had on a few occasions hemorrhage into his knees, which resulted in the usual symptoms of inflammation and disability. At the age of 3 years, the right knee was diagnosed as tuberculous and a cast applied. There had been numerous subcutaneous hemorrhages in and about the right wrist six years previously. This had been untreated because all the local surgeons were away on military duty. The wrist was contracted to a right angle, although it could be extended to 45 degrees. Otherwise, there was fair function.

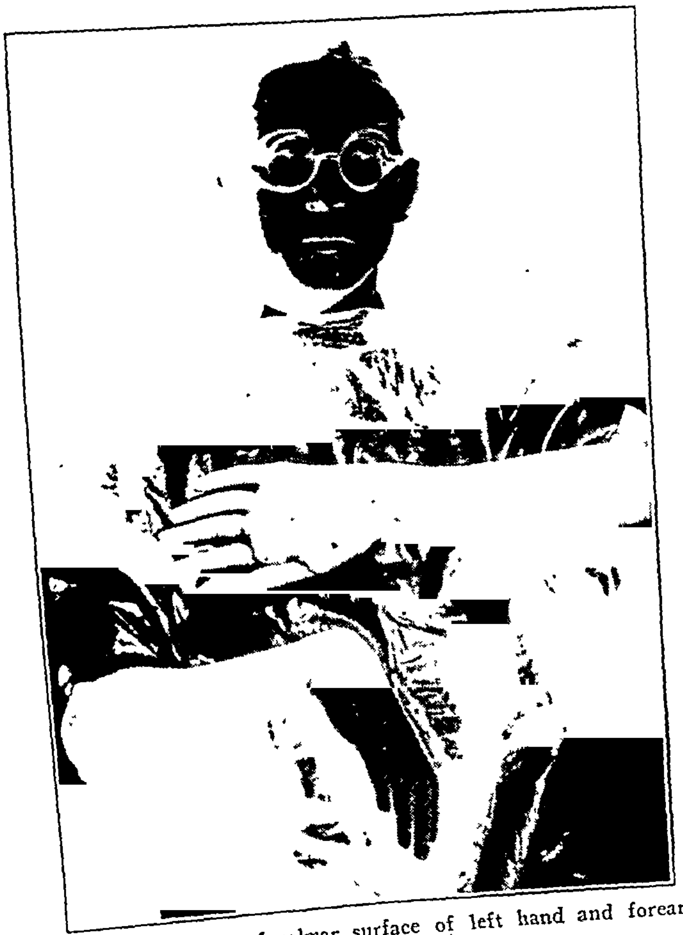

Fig. 1.—Appearance of palmar surface of left hand and forearm in patient with hemophilia with Volkmann syndrome.

The extreme disability of the left wrist and forearm had caused him to seek relief. This member had been normal until October, 1924, when there had been an apparently spontaneous hemorrhage about the right elbow joint, the swelling being largely at and below the flexure of the elbow. This swelling remained for three or four weeks and resulted in the following condition: The hand was cold, smooth, glazed and cyanotic. The fingers were slightly flexed, shiny, stiff, ankylosed and useless, as was also the wrist. Rotation of the forearm was limited to about 5 degrees. There was some contracture of the elbow. This forearm and hand were functionless and useless. A pencil could not be held. The hand could not be used in passing food to the mouth. Sensation was impaired, and blisters were common if application of heat was not guarded. Sensation was nearly absent over the distribution of the ulnar nerve. Both palmar and dorsal surfaces of the fingers were anesthetic to the metacarpophalangeal joints. Anesthesia extended throughout the course of the ulnar nerve.

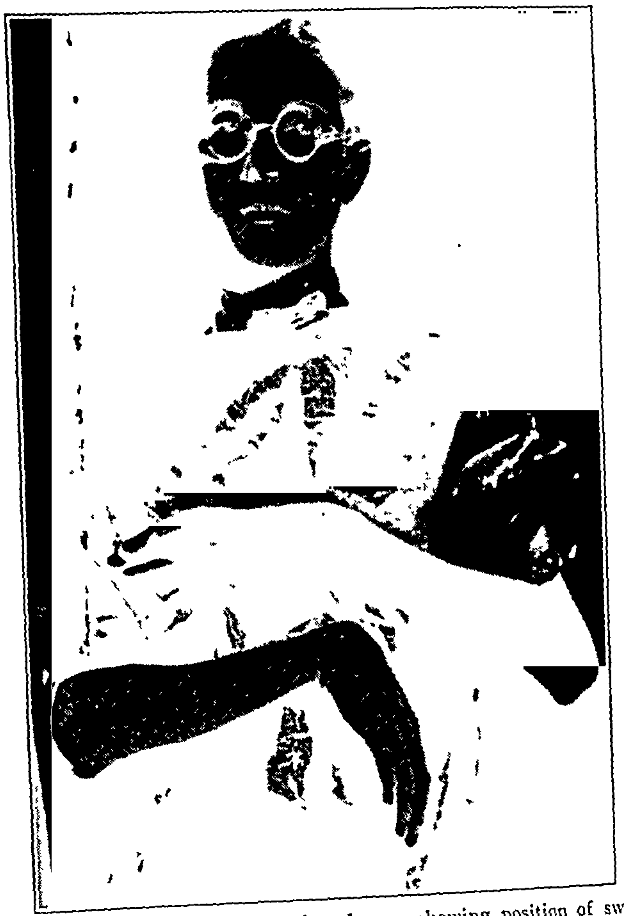

Fig. 2.—Side view of left hand and arm, showing position of swelling.

The diagnosis of ischemic paralysis was made with the assumption that the hemorrhage had been so extreme about the vessels of the elbow and under the deep fascia that the circulation had been so effectively cut off as to have produced an ischemic myositis and neuritis, of such duration and severity as to have caused the present condition. The only feature of this case that did not run true to Volkmann's paralysis and ischemic contracture was the absence of flexion contractures of the fingers and of pressure scars, which have been almost invariably present in all the patients I have previously seen. I understood this best by reminding myself that in cases produced in the usual way, the flexor muscles, being of larger bulk, receive most of the injury and, on account of there being a greater power of contracture on the flexor side, the wrist and fingers are flexed. In this case, the paralysis and contraction of the muscles were about evenly balanced.

Previous attempt at flexing the fingers and wrist had resulted in hemorrhage and the condition made worse. It was therefore decided to proceed with great gentleness and caution. Radiant heat and diathermy, the gentlest massage and active and passive motion of minimal character, were employed, which quickly improved the circulation and rendered the hand warm for most of the time.

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* Read before the Western Surgical Association, Wichita, Kan., Dec. 18, 1925.

Cock up splints were applied to both hands, great care having been observed to avoid pressure or force. Notwithstanding our precautions, hemorrhage occurred in the palm of the ischemic hand, and the support had to be abandoned, but the patient was directed to resume its careful, guarded use when possible.

The coagulation time varied with a range of from fourteen to forty minutes but, by the use of fibrinogen, it was temporarily reduced to six minutes.

A search of the literature has brought little that has been helpful in hemophila. All the therapy developed in recent years, the use of which is so helpful in emergency treatment, is acknowledged to be of short transient effect; that there is no known permanent cure is also acknowledged.

It was advised, therefore, that the home physician arrange with his druggist to have constantly on hand a supply of these agents for emergency use, to limit if possible the extent of the hemorrhage and thus to control further and more serious results.

I have presented this case because of its rarity, having found no record of a case with similar causation, and believe that ischemic myositis and neuritis-Volkmann paralysis can be produced by impairment of the circulation when neither splints nor tight dressings have been used.

Aquila Court Building.

FULL UPPER TOOTH PLATE REMOVED FROM ESOPHAGUS

G. S. McReynolds, M.D., Temple, Texas
Endoscopist, Kings Daughters Hospital

This case is of unusual interest because of the size of the foreign body and the length of time it had been tolerated in the esophagus.

A man, aged 65, who was syphilitic and an habitual user of alcohol, ate a large oyster stew, Dec. 4, 1925, and a few hours later went into a cafe and ordered two dozen fried oysters. While waiting to be served he had a severe choking spell for several minutes, when the trouble subsided; but he was unable to eat and went home. He continued to have considerable difficulty in swallowing, breathing and talking, but had no pain. A day or so later a physician made a diagnosis of possible laryngeal diphtheria and gave antitoxin, but the patient continued having difficulty in breathing, talking and swallowing, and could take only liquids.

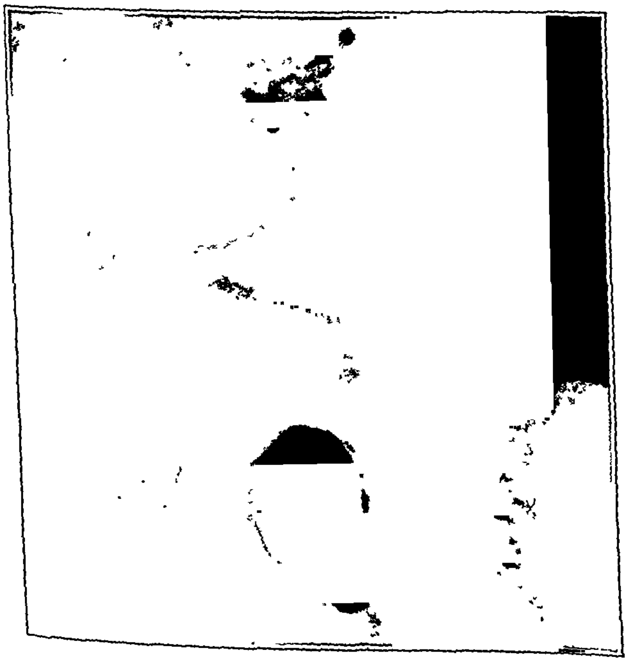


Fig 1.—Location of foreign body.

January 5, I found him talking huskily and breathing with considerable effort. There was no cyanosis. He was still able to swallow only liquids, but thought he had been swallowing more easily the last few days. He had no pain and no fever. Examination of the throat showed some membrane on the pharyngeal wall and some irritation of the throat. He complained of a great deal of secretion forming in his throat. With the facilities at his home I could not see a foreign body. I asked him whether or not he had swallowed his teeth, and he declared that he had not. His weight had dropped from 174 pounds (79 Kg.) to 144 (65 Kg.) in thirty-two days' time, but he was fairly strong and able to walk about. A culture from the throat was negative as to diphtheria; a Wassermann test of the blood was 4 plus positive.

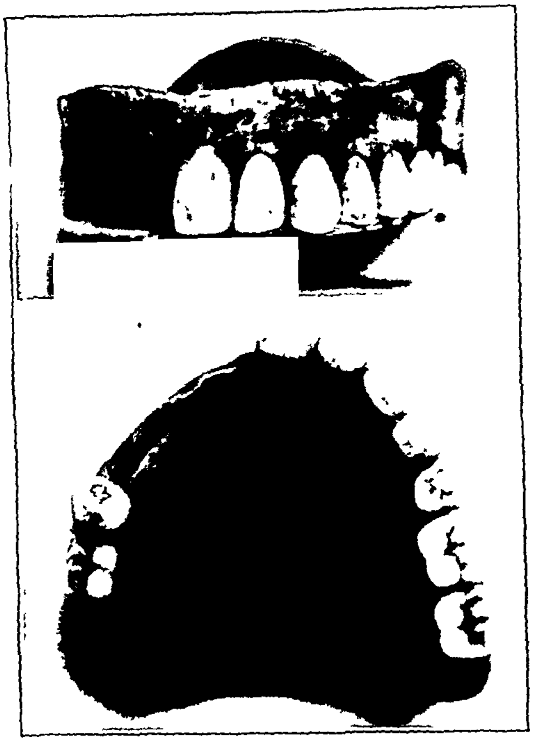


Fig. 2.—Size of plate.

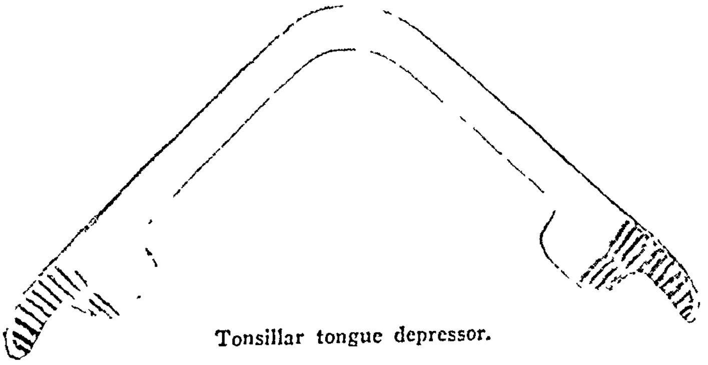
January 6, he reported at my office, where I made an examination with a laryngeal mirror and could see something white extending across the throat on a level with the top of the larynx. With my finger I felt a large, smooth substance extending all the way across the throat. A fluoroscopic and roentgenographic examination showed an enormous foreign body at the upper end of the esophagus. The patient was given one-half grain (0.03 Gm.) of morphine and an hour later the pharynx was cocainized with 10 per cent cocaine. The Jackson adult laryngoscope was introduced and brought the foreign body into view, when it was grasped with alligator forceps and brought up into the pharynx proper. I then had to grasp it with much stronger forceps with small, sharp teeth and, owing to its size and position, had to turn it and push back the pillars of the fauces with my fingers, thereupon delivering a full upper tooth plate measuring 2⅛ inches (53 mm.) in each direction. There was some pain at the time of delivery but none thereafter and there has been none since, recovery being uneventful. As shown in figure 1, the foreign body extended about 2 inches down the esophagus. Figure 2 shows the actual size of the plate. I do not know of any published report of a foreign body as large as this removed from the esophagus. The case demonstrates that a foreign body in the esophagus, regardless of its size, should be removed through the mouth rather than by an external operation.

The points of especial interest in this case are the size of the foreign body, the length of time it remained in the esophagus, thirty-three days, and the absence of pain during that time.

A RETRACTING TONSILLAR TONGUE DEPRESSOR*

T. Carroll Davis, M.D., Philadelphia

Tongue depressors have been made in great numbers and varieties, but none seemed quite adequate for tonsillar work. The one described here I designed about two years ago and have found it very satisfactory. It has a shoulder and notch near the tip, as shown in the illustration. The shoulder is placed between the tongue and the jaw, and the notch then allows free access to the tonsil. The ends are made for right and left, and the shoulder helps hold when that end is used as a handle.



Tonsillar tongue depressor.

It has three great advantages:

The shoulder, being placed between the jaw and the tongue, not only depresses the latter but also retracts it. This enables the operator to get a view of the lower portion of the tonsil and of the tonsillar cavity when the tonsil has been removed.

The shoulder also anchors the depressor so that it is not so likely to move out of position when an assistant is holding it, but is unable to observe it constantly while the operator's head excludes his vision.

Since the depressor is held at the side of the tongue, it does not tend to press against the epiglottis and interfere with the patient's breathing.

This depressor has been made in two sizes; one for children and the other for adults.

3128 North Broad Street.

A METHOD FOR IMMEDIATE TREATMENT OF FRACTURED PATELLA

Frank P. Corrigan, M.D., Cleveland
Director of Surgery, St. Alexis Hospital

A part of this method was first demonstrated to me by Professor Bardenheuer of Cologne, Germany, in 1910. It consists of plaster extensions, one applied to the anterior part of the thigh over the quadriceps femoris group of muscles, the other applied over the anterior tibial group. These extensions pass through each other in a way devised, I believe, by Bardenheuer, and called by him "durch greifende zug," or what might be roughly translated as a "through and through pull."

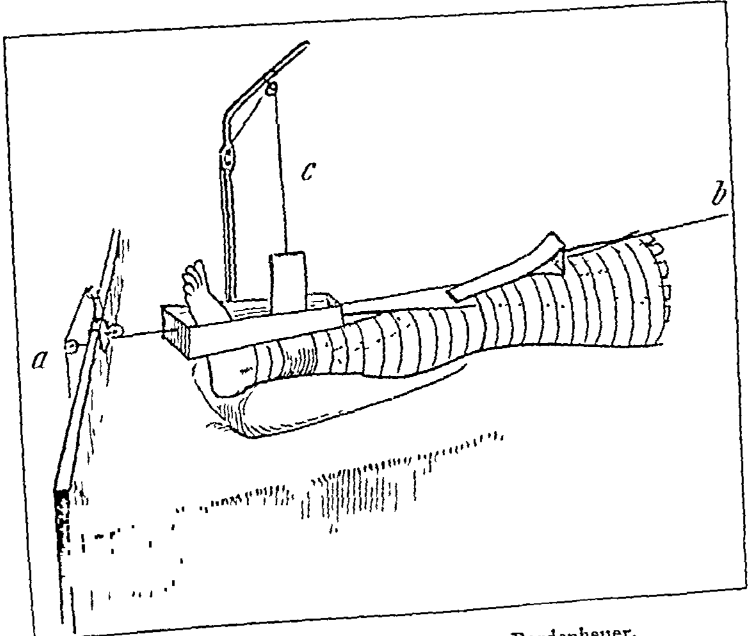


Fig. 1.—Extension method, after Bardenheuer.

The results demonstrated in the Cologne clinic had led me to adopt his method in certain cases. I have used it for a number of years with results that compare favorably with the operative treatment. Especially have I found it useful preliminary to operations and in cases in which operation was contraindicated.

During the last eighteen months I have been using another method combined with the "durch greifende zug" of Bardenheuer, which I now offer as a method of choice in the immediate treatment of fractured patella. I think we are all agreed that it is wise to wait at least a week before proceeding to the suture by open operation of a fractured patella. My own practice is to wait until eight or nine days have elapsed in the case of adults in order that the exudate and hemorrhage may be partially absorbed and until the defensive wall of nature has been well established. I feel that the danger of infection of the knee joint is greatly lessened by this delay. But, by the method here illustrated, the fracture may be reduced immediately and in many cases maintained in such good reduction that no further operation is necessary. The objection to the old method in which the extension was by weight and pulley was the enforced confinement necessary to maintain accurate and continued extension. To overcome this objection and give the patient greater freedom of motion and at the same time also to maintain continuous extension which will tend to reduction and to maintenance in apposition of the broken fragments, I have devised the method here illustrated.

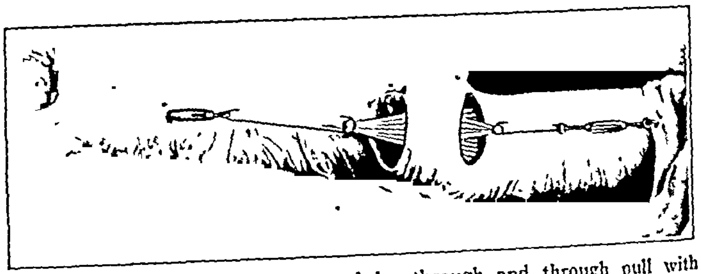


Fig. 2.—Fractured patella treated by through and through pull with cast applied.

The adhesive plaster is first applied above and below the knee, and the lower plaster strips as they converge pass through a slotlike opening in the converging plaster extension which has been applied above over the quadriceps femoris. The separation, in transverse fracture of the patella, is due in great part to the retraction of the quadriceps and in part also to distention of the joint by blood and exudate. The lower fragment is not much displaced but must be held in position so that the upper fragment can be pulled firmly against it and thus favor bony union. The presence of blood and exudate in the joint is the contraindication to early operation. The gradual shortening of the muscles, increasing the interval between the fragments, is reason enough for instituting treatment as early as possible. The treatment here offered seems to me to meet these indications.

After adhesive plasters have been applied and allowed to set well on the skin of the injured leg, a flattened cylinder of cardboard is placed over the knee, the ends curving up in like a cow's horns, above and below; a pad about 4 inches in circumference is placed on top of it immediately over the patella. A plaster cast is then applied to the leg in such a way that the ends of the flattened cardboard cylinder are left outside. The pad causes the plaster to harden in the form of a dome over the patellar region, thus rendering the fracture region accessible for observation. The cardboard cylinder and pad are both removed when the cast has hardened. The cardboard cylinder, curved in a semicircle, leaves slotlike openings above and below the patella, as shown in figure 2. This leaves the region of the fracture readily accessible and permits adjustment of the extension apparatus which has been previously applied. Incorporated into the cast above and below the knee are two hooks or rings; these can be fixed in place by wire buried in the plaster. I have used, in some cases, hooks that have been soldered to flexible sheet brass or aluminum plates. Picture wire is securely attached to the ends of the extending adhesive plasters. The other ends of the wires are secured to turnbuckles and the extension applied above and below by attaching to the hooks and screwing up the turnbuckles to required tension as shown in the illustration (fig. 2).

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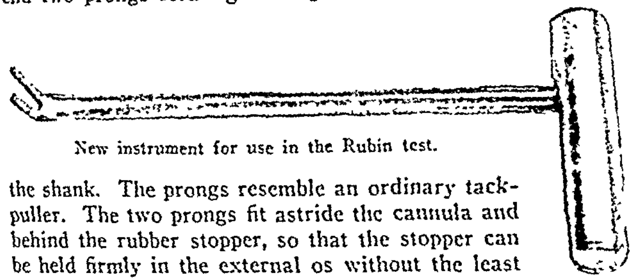
* From the Nose and Throat Department of the Samaritan Hospital.

1110 Euclid Avenue.

A NEW INSTRUMENT FOR USE IN THE RUBIN TEST *

J. ARTHUR YORK, M.D., BALTIMORE

This instrument is composed of a handle that fits the hand comfortably, and a long, slender shank, which has at its distal end two prongs forming an angle of about 100 degrees with the shank. The prongs resemble an ordinary tack-puller. The two prongs fit astride the cannula and behind the rubber stopper, so that the stopper can be held firmly in the external os without the least tiring of the hand and without injury to the stopper, which does occur when a clamp is used.



New instrument for use in the Rubin test.

This instrument has been received with favor in the gynecologic departments of the Johns Hopkins Hospital, Union Memorial Hospital, and Hospital for the Women of Maryland.

VEGETABLE MARROW AS A CAUSE OF POSITIVE BENZIDINE TESTS IN THE STOOLS OF DIABETIC PATIENTS †

JOSEPH C. MASSEE, M.D., BOSTON

In the routine laboratory examinations at the Peter Bent Brigham Hospital, it was observed that a large number of diabetic patients in whom there was no reason to suspect a pathologic condition of the gastro-intestinal tract showed a positive benzidine test for occult blood in the feces. It was believed that some other factor than the meat in the diabetic diet might be the cause of this positive reaction, since a larger proportion of diabetic patients than other patients on diets containing meat seemed to give a positive test. Accordingly, various articles in the diets commonly given to diabetic patients were tested both by the benzidine and by the guaiac test. In this way it was found that in addition to the meats a certain vegetable, English marrow, gave a positive benzidine and guaiac test. This marrow has been largely used in diabetic diets because of its bulk and low calory content. Other vegetables, such as spinach, which might be expected to give a positive test because of their chlorophyl content, failed to do so by the tests and technic used.

To ascertain whether marrow was actually the cause of a positive benzidine test in the stools, several diabetic patients were placed on a diabetic diet without meat but containing marrow. The benzidine reaction of the feces, though not so strong as when both meat and vegetable marrow were given, persisted in being usually positive as long as vegetable marrow was given. A patient with severe diabetes was kept on a meat-free and marrow-free diet for nine days with only a single positive benzidine test. After having vegetable marrow added to the meat-free diet, his stools showed positive tests in four out of the next six days. When meat was added to the diet, the benzidine reaction promptly became much stronger and remained so. Thus it seems that marrow may really give a false positive test for occult blood in the feces, even when the patient is on a meat-free diet, and when the patient has a diet containing meat, it is an additional factor in producing a positive benzidine test in the stool.

721 Huntington Avenue.

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* From the Hospital for the Women of Maryland.

† From the Medical Clinic of the Peter Bent Brigham Hospital.

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

BERNARD FANTUS, M.D.
Associate Clinical Professor of Medicine, Rush Medical College
CHICAGO

(Continued from page 325)

INDICATIONS FOR INTRAVENOUS THERAPY

1. *To Increase Amount of Circulating Fluid.*—The most obvious indication for intravenous injection is to supply a marked deficiency in the circulating fluid. When this deficiency includes all or some of the cellular ingredients of the blood, as after severe hemorrhage, in pernicious anemia or in purpura, there is nothing that equals blood transfusion, the details of which can hardly be discussed here.

The injection of physiologic sodium chloride solution, though quite generally recommended by clinicians for producing at any rate temporary and symptomatic improvement and to be employed when blood transfusion is impossible, has not been able to bear the criterion of experimental investigation. "Streams of blood and hecatombs of animals"[100] have sealed the verdict that, when just enough blood has been withdrawn to be surely fatal, infusion of physiologic sodium chloride solution will not save the victim. Thus, rabbits with blood losses exceeding 3 per cent died with and without salt infusion; with blood losses below 3 per cent, the animals generally recovered without infusions.

Because of this unsatisfactory status of salt solution, numerous modifications of it have been experimented with. The one that has probably the strongest backing is the use of 7 per cent acacia salt solution originated by Bayliss[101] during the World War. By means of it, it is asserted, serious results can be prevented even when the blood corpuscles have been diminished to half their number, a reduction otherwise fatal. As acacia is a colloid and the blood vessels are impermeable to colloids, it attracts or retains water in the blood. Doubts have, however, been raised regarding the safety of this procedure, among others by Lee,[102] who reviews the literature opposing this measure and reports two cases of unexpectedly sudden death after acacia-saline infusion. Hanzlik and his collaborators also find acacia dangerous on intravenous injection. It is doubtful, therefore, that this solution can be recommended for general use.

The best results from the infusion of physiologic sodium chloride solution are secured when the system has sustained a great loss of fluid from excessive vomiting and purging, as in Asiatic cholera, in dysentery and in gastro-enteritis of infants. In these conditions the administration of the fluid should be intravenous only when the urgency of the relief required renders subcutaneous infusion not sufficiently rapid in its effects.

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* This is the thirty-second of a series of articles on "The Technic of Medication." When completed, the articles will be assembled in book form.

[100] Gumprecht, F.: Die Technic der speciellen Therapie, Gustav Fischer, 1903.

[101] Bayliss, W. M.: Acacia for Transfusion, J. A. M. A. 78: 1885 (June 17) 1922.

[102] Lee, R. V. A.: Sudden Death in Two Patients Following Intravenous Injections of Acacia, J. A. M. A. 79: 726 (Aug. 26) 1922.

In these conditions, the indication exists for the use of liberal quantities (for adults 1 liter or even more), repeated sufficiently often to maintain the unfortunately somewhat transient improvement. When saline solution is used for this purpose, the addition of colloid would be undesirable, as we aim here to antagonize tissue thirst rather than low blood pressure; and 0.6 or 0.7 per cent solution is preferable to 0.9 per cent, as more thirst quenching. Banerji[103] advocates determination of the specific gravity of the blood as the best guide to the use of saline infusion. He adds 6.25 cc. of a saturated solution of magnesium sulphate to 25 cc. of water, so as to obtain a solution with a specific gravity of 1.060 at body temperature. If a drop of blood sinks in such solution, saline infusion is demanded. If the drop sinks slowly, he advises the use of about a liter; if rapidly, about 2 liters, if very rapidly, like lead, as much as 3 liters.

Of late the advocacy of using sugar solution instead of salt solution has become more and more insistent. Salt is not only useless to the system but a definite burden to it and injurious to abnormally sensitive kidney epithelium, as in cases of cholera; while sugar is not only harmless but also supplies a definite amount of nourishment. Two liters of isotonic dextrose solution, which is approximately 4.5 per cent (more accurately 4.76 per cent), represents about 260 calories. Hence, Strauss[104] urges the administration of this solution as the best routine procedure in cholera. Litchfield[105] concludes that dextrose solution is preferable, when there is danger of acidosis and in all cases of inanition, as well as in toxic states. However, the injection of a considerable amount of such a solution may cause chill, fever and sweat. Indeed, isotonic sugar solution has been advocated by Audain and Masmontail[106] for the induction of such reaction in the treatment of septicemia. Williams and Swett[107] ascribe these reactions to the fact that dextrose solutions become acid on sterilization; and they report that, if the p_H of the solution is brought to approximately 7.4 by means of potassium phosphate buffer, the liability to such reactions is much diminished. Stoddard[108] agrees that the addition of buffer solution lessens the liability to reactions, but doubts that enough acid is introduced to account for these on the basis of acidosis. Pendleton[109] suggests that the agglutination of the red blood corpuscles produced by 5 and 10 per cent dextrose solutions is responsible for these reactions. He finds that this agglutination is greatly diminished by using definitely hypertonic (40 per cent) solutions of dextrose; and that it may be prevented by the addition of sodium chloride (from 0.1 to 0.2 per cent), dibasic potassium phosphate (from 0.1 to 0.2 per cent), by rendering the solution slightly alkaline (two hundred and fiftieth normal sodium hydroxide), or by mixing the dextrose solution with an equal or greater volume of blood. Very slow injection of the solution would in part at least accomplish the result clinically. Sucrose or glycerin solution produces similar agglutination.

2. *Intravenous Nutrition.*—The only food that can well be administered intravenously is sugar. Fat is out of the question because of the danger of fat embolism, and foreign protein or its split products because of their toxic action when administered parenterally, though amino-acid mixtures have been shown to be tolerated and assimilated by animals on intravenous injection by Henriques and Anderson.[110] Thus far, however, these have not been used in man. Among the sugars, the one most generally employed for this purpose is dextrose, as it is the sugar normally contained in the blood. Dextrose solution can be administered in concentrated form, as 30 per cent solution, and in considerable quantity, provided it is given slowly enough.

The limit to the amount of sugar that can be introduced in this manner is set by the ability of the system to assimilate it, and by the permeability of the kidneys. Woodyatt, Sansum and Wilder,[111] who studied the dextrose tolerance of men by means of prolonged accurately timed intravenous injections of sugar, found that adult men and women of average size, weight and nutrition begin to excrete abnormal quantities of dextrose in the urine when the injection rate into the vein is above 0.8 Gm. and below 0.9 Gm. (about 0.85 Gm.) per kilogram of body weight hourly. From this it will be seen that a person weighing 70 Kg. would tolerate up to 63 Gm. of dextrose, yielding approximately 252 calories, per hour. This means that, in giving 10 per cent dextrose solution intravenously, the flow should be so arranged as to consume at least an hour's time in the introduction of 500 cc. If it is introduced much more rapidly, a considerable portion of it is apt to be excreted in the urine. If such injection were continued throughout the day, 6,048 calories would be introduced in the course of the twenty-four hours, which would be double the caloric income required by the resting person. Hence, it may be asserted that intravenous nutrition with dextrose is clinically feasible. Marriott,[112] as well as Porter, Morris and Meyer,[113] use in severe nutritional disorders, when need for food is imperative, the intravenous injection of dextrose solution as a routine, even in those cases in which some sugar appears in the urine.

Aside from its importance as life-sustaining fuel, the administration of carbohydrate may be of life-saving significance in conditions associated with acidosis and a tendency to fatty degeneration. The researches of Opie and Alford,[114] Graham[115] and Simonds[116] have demonstrated experimentally the protective value of carbohydrate in certain types of poisoning believed to be associated with increased protein catabolism, such as poisoning by chloroform and phosphorus. Thus, in Simonds' experiments, the dogs that were given only phosphorus became exceedingly ill and several died as a result of the poisoning, while the animals that were given an equivalent amount of phosphorus with feeding of sugar showed little or no evidence of illness clinically and were playful. The livers of the phosphorus dogs showed absence of glycogen, marked increase in visible fat, and necrosis. The livers of the phosphorus-sugar dogs were free from necrosis and showed glycogen and much less visible fat. Acidosis, as is well known, is the immediate result of the oxidation of fatty acid in the absence of a sufficient proportion of oxidizing glucose. The ration required appears to be that F.A.: G. shall not exceed 1.5. Therefore, each gram of glucose not only provides 4 calories but also makes possible a normal oxidation of 1.5 Gm. of higher fatty acid. This fat is supplied, in starvation, by the body itself; and, if glucose is not furnished, with the development of acidosis. From a clinical standpoint, Valk [117] among others advocates the use of dextrose infusions in postoperative acidosis, with persistent nausea and vomiting. He gives from 250 to 500 cc. of 10 to 20 per cent dextrose solution in freshly distilled water, titrated and neutralized with sodium carbonate, filtered and autoclaved on three successive days. This solution can be given as often as every six to twelve hours.

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[103] Banerji, D. N.: Specific Gravity of Blood in Cholera, Calcutta M. J. **16**: 459 (June) 1922.

[104] Strauss, H.: Zuckerinfusionen bei Cholera, Therap. d. Gegenw. **56**: 370 (Oct.) 1915.

[105] Litchfield, Lawrence: The Abuse of Normal Salt Solution, J. A. M. A. **63**: 307 (July 25) 1914.

[106] Audain, G., and Masmontail, F.: Presse méd. **25**: 641 (Nov. 8) 1917.

[107] Williams, J. R., and Swett, Madeleine: Hydrogen Ion Concentration Studies, J. A. M. A. **78**: 1024 (April 18) 1922.

[108] Stoddard, J. L.: The Avoidance of Intravenous Glucose Reactions, Boston M. & S. J. **191**: 1121 (Dec. 11) 1924.

[109] Pendleton, W. R.: Methods for Preventing the Agglutination of Blood by Glucose Solutions, J. Lab. & Clin. Med., to be published.

[110] Henriques, V., and Anderson, A. C.: Ztschr. f. physiol. Chem. **92**: 194, 1914. Intravenous Nutrition, editorial, J. A. M. A. **62**: 385 (Jan. 31) 1914; New Experiences with Intravenous Nutrition, ibid. **63**: 1859 (Nov. 21) 1914.

[111] Woodyatt, R. T.; Sansum, W. D., and Wilder, R. M.: Prolonged and Accurately Timed Intravenous Injections of Sugar, J. A. M. A. **65**: 2067 (Dec. 11) 1915.

[112] Marriott, W. M.: The Artificial Feeding of Athreptic Infants, J. A. M. A. **73**: 1173 (Oct. 10) 1919.

[113] Porter, L.; Morris, G. B., and Meyer, K. F.: Certain Nutritional Disorders Associated with a Putrefactive Intestinal Flora, Am. J. Dis. Child. **18**: 254 (Oct.) 1919.

[114] Opie, E. L., and Alford, L. B.: The Influence of Diet on Hepatic Necrosis and Toxicity of Chloroform, J. A. M. A. **62**: 895 (March 21) 1914; J. Exper. Med. **21**: 1, 1915.

[115] Graham, E. A.: J. Exper. Med. **21**: 185, 1915.

[116] Simonds, J. P.: J. Exper. Med. **28**: 663 (Dec.) 1918.

In the hyperemesis of pregnancy, as well as in other forms of hyperemesis, dextrose infusion has been found of life-saving importance. Thus, Titus [118] reports favorable results from the injection of from 50 to 75 Gm. of dextrose in hypertonic solution (25 per cent), which he finds acts more favorably than weak solutions.

Intravenous dextrose infusion, in conjunction with insulin administration, has become of the greatest importance in the grave acidotic crises of diabetes mellitus. While there can be no question of the necessity of the combined use of insulin and carbohydrate in this condition, doubt may be entertained as to the advantage of this combination in nondiabetic acidosis, which has been advocated by a number of clinicians. Titus, for instance, has seen no advantage from the combination in hyperemesis gravidarum.

3. *Intravenous Osmotherapy.*—Under the heading "osmotherapy" might be included all those remedies, hypotonic as well as hypertonic, that act by means of the osmotic changes produced. As, however, the most striking results are occasioned by the intravenous administration of hypertonic solutions, it is their injection that is referred to under this heading. As osmotic changes are in proportion to the concentration of the solution, they are observable only with relatively harmless bodies, such as salt, urea and, most especially, dextrose, of which as high a concentration as 50 per cent may safely be employed in quantities up to 100 cc. and even more. The general tendency of the results produced by these osmotic changes is identical no matter what substance is employed; still, the specific action of some of these reinforces and emphasizes certain changes produced by the osmotic action. Thus, there is a tendency to increase the clotting power of the blood from all osmotherapeutic agents; but this is most marked with calcium.

It is remarkable how slight a change in the osmotic tension of the blood is produced by the slow injection of hypertonic solutions in therapeutic quantities. This does not mean that the osmotic tension of the blood cannot be changed, but that the tissues, most especially the nervous system, are so intolerant of osmotic changes in the blood that a sufficiently rapid injection or a slow injection of excessive quantity means alarming symptoms and even death. The reason for this absence of demonstrable change in osmotic tension of the blood from therapeutic osmotherapy lies in an elaborate mechanism for the protection of isotony of the parenchyma, on the one hand, and of the blood, on the other, the added material being temporarily stored in the mesenchyma, which is most especially affected by it. At the same time, tissue fluid enters the blood to lower its osmotic tension. The added material is gradually reabsorbed into the blood, as the emunctories are relieving themselves of the quantity stored in them by elimination into their secretion. This stream of tissue fluid into and out of the blood explains some of the chief effects and possible therapeutic uses of osmotherapy.

The stream into the blood is responsible for an increased absorption from the alimentary tract and elsewhere, as well as a lessening of secretions. Attempts have been made to employ the increase of absorption therapeutically in the exudative forms of eye disease, as well as in suppuration of the accessory sinuses of the nose. In the latter condition, transient diminution of headache has been described following infusion of hypertonic dextrose solution. Sansum [119] has obtained decided lowering of the intra-ocular tension in cases of glaucoma by prolonged intravenous injection of hypertonic glucose solutions. Most marked seems to be the effect of osmotherapy in reducing intracranial pressure. Weed and McKibben [120] have pointed out that it is possible to diminish the bulk of the brain by the injection of a 35 per cent solution of sodium chloride into the blood stream, and that this is accompanied by a reduction in the cerebrospinal fluid pressure. Sachs, Belcher and Malone,[121] as well as Ebaugh and Stevenson,[122] have reported on the use of strong salt solution in the control of excessive intracranial tension and for the relief of "tension headaches," such as may occur in persons suffering from cerebral tumor. This diminution of tension is likewise useful as a preliminary to operation on the brain in such cases, as it lessens the tendency to cerebral hernia on opening of the meninges. The lowering of tension is usually preceded, as has been shown by Weed and Hughson,[123] by a sharp rise. This is followed by a prolonged and profound fall in cerebrospinal fluid pressure that may last for hours. The reason for the lowering in pressure is partly absorption of fluid into the blood, but chiefly a diminution in the formation of cerebrospinal fluid.

Haden [124] advocates the use of dextrose rather than of salt solution in cases of meningitis and other conditions of excessive intracranial pressure. He infuses a 25 per cent solution of dextrose every twelve hours, from the onset of the disease until there is no longer any evidence of increased intracranial pressure. These injections are given in addition to the specific treatment and lumbar puncture with drainage of the spinal fluid. If immune serum is given intravenously, the dextrose solution may be given at the same time. The injection should be made slowly, so that one hour is consumed in administering 250 cc. of a 25 per cent solution. In aseptic meningitis, such as that following intraspinal injections, intravenous osmotherapy offers a prospect of aid.

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[117] Valk, A. De T.: Virginia M. Monthly **48:** 405 (Oct.) 1921.

[118] Titus, Paul: Hyperemesis Gravidarum, J. A. M. A. **85:** 488 (Aug. 15) 1925.

[119] Sansum, W. D.: Glucose Injections, J. A. M. A. **68:** 1885 (June 23) 1917.

[120] Weed, L. H., and McKibben, P. S.: Am. J. Physiol. **48:** 512 (May) 1919.

[121] Sachs, Ernest; and Belcher, G. W.: Use of Saturated Salt Solution Intravenously During Intracranial Operations, J. A. M. A. **75:** 667 (Sept. 4) 1920. Sachs, Ernest; and Malone, J. Y.: The Use of Hypertonic Salt in Experimental Increased Intracranial Pressure, Am. J. Physiol. **55:** 277 (March) 1921.

[122] Ebaugh, F. G, and Stevenson, G. S.: Bull. Johns Hopkins Hosp. **31:** 440 (Dec.) 1920.

[123] Weed, L. H., and Hughson, W.: Am. J. Physiol. **58:** 53, 85, 101 (Nov.) 1921.

[124] Haden, R. L.: Therapeutic Application of the Alteration of Brain Volume, J. A. M. A. **73:** 983 (Sept. 27) 1919.

Elsewhere the diminution of secretory activity from hypertonic infusion shows itself in the dryness of the mouth and thirst, in a definitely demonstrable lessening in the quantity of gastric secretion, as well as of its acidity. These effects are at least as marked as those resulting from atropine. From a therapeutic standpoint, the use of this inhibition of secretion has been suggested in cases of mastitis to check milk secretion. Stejskal[125] reports that he obtained good results in three cases of this kind with 20 cc. of 50 per cent solution of dextrose, as well as with from 10 to 20 cc. of 10 per cent calcium chloride solution. He also believes that a definite improvement can be obtained in many cases of hyperthyroidism from a course of hypertonic injections. Thus, ten injections of 20 cc. of 50 per cent dextrose solution given in the course of two weeks have produced very definite improvement in two cases of exophthalmic goiter. Goetsch[126] reports favorable results in the combating of thyroid postoperative acidosis, which is liable to develop in the first twenty-four hours, from the slow intravenous injection of glucose solution. He advises its administration as soon as acidosis (indicated by acetonuria) appears, as this injection acts by antagonizing acidosis. He finds that it controls the symptoms and makes the postoperative course much more comfortable and safe. An anhydrotic action of hypertonic injections, especially in the night sweats of tuberculosis, has been noted by many observers, especially with calcium. Meyer-Bisch,[127] who reports that the intravenous injection of 2 cc. of a 20 per cent solution of sugar or of sodium chloride (but not of sodium bicarbonate) often produces a definite inhibitory influence on the night sweat in many cases of tuberculosis, believes that an explanation of this action based on osmotic changes cannot apply, as the quantities employed are too small and the effect often lasts for days and weeks. It is suggested that "plasma activation" may have a share in the effect.

Diuretic action is not a marked property of these injections. The tendency to increase in the quantity of urine, along with the elimination of the added material, is counteracted by the general inhibition of secretory action. The diuretic tendency is greater with sodium sulphate, from 10 to 20 per cent solution, in quantities of 20 cc.; urea, 20 cc. of 20 per cent solution, and calcium chloride, from 10 to 20 cc. of 10 per cent solution. These, combined with a salt poor diet, will favor a lessening of edema. However, even under these conditions the profuse diuresis, such as is obtained from the purine bodies, is not to be looked for.

Büdingen[128] believed that glucose could stimulate the power of the heart muscle when given in higher than normal concentrations. After peroral administration, the necessary change in sugar concentration does not occur, as the liver retains the excess glycogen. He considers 20 per cent dextrose infusion a valuable adjuvant to digitalis administration, especially in myocarditis. Korbsch[129] employed, in the treatment of heart disease with edema, 50 per cent dextrose solution, in a daily dose of 20 cc. and more, with alleged favorable results. Klewitz and Kirchheim[130] subjected Büdingen's suggestion to experimental and clinical tests. They found that perfusing the isolated rabbit's heart with Ringer's or Locke's solution, to which 30 per cent dextrose had been added, increased the height of contractions and improved the coronary circulation. This effect starts almost immediately and continues usually for a few minutes. It was especially noticeable when the heart had commenced to weaken. When, however, the authors applied the same technic to the heart of animals poisoned with phosphorus, they were unable to obtain any improvement in the cardiac action, even when the change in the heart muscle was so slight as not to be recognizable on microscopic examination. The clinical experiments of these authors with the intravenous injection of 30 per cent dextrose solution in cases of angina pectoris and anginoid conditions, as well as in decompensated valvular and myocardial cases, did not produce very satisfactory results. The administration of 200 cc. of such solution was actually dangerous and led to death from cardiac insufficiency in a case of myocardial degeneration almost immediately after the infusion. Even the injection of from 30 to 50 cc. produced occasional disagreeable and sometimes even threatening results: chill and high fever, marked distress and in one case even sudden cessation of the heart beat and the appearance of pulmonary edema. While objective improvement was not demonstrable in the various cases, some of the patients expressed themselves as experiencing transient lessening of the sensation of oppression and a quieting of the heart as the result of the treatment. However, the results are so moderate as to suggest a lack of clinical value, which might be explained by the lack of effect of dextrose on even the slightly degenerated heart of rabbits poisoned with phosphorus. On the other hand, Edmunds and Cooper,[131] experimenting on dogs whose heart had been poisoned with diphtheria toxin, found that dextrose was the most satisfactory remedy in this condition. If 10 per cent dextrose solution could be gotten into the circulation before the heart stopped, they never lost a single animal. After they had secured an increase in blood pressure by the use of dextrose, the improvement was maintained by digitalis, epinephrine or pituitary.

Blood pressure is not raised by hypertonic infusions. Sugar solutions produce, however, a dilatation of the capillaries, whereby the venous pressure is raised. It has been found four times higher than at the beginning. The pulse pressure is also increased. Various organs, the extremities, and even the brain and intestines have been shown to be increased in size through this vasodilatation. The heart is not primarily affected; but there is a considerable increase in the amount of work it does, caused by the lessening in the resistance in the capillaries. The increase in intracapillary pressure is accompanied by an increased production of lymph.

The first capillary territory affected by hypertonic infusion is that of the lungs; and one would expect that the changes produced by intravenous osmotherapy would be most prominent here. This, indeed, seems to be the case. Stejskal[125] reports a favorable influence on pulmonary edema of inflammatory as well as of transudative nature, and his observations have been confirmed by others. Favorable influence has likewise been exerted on pneumonia, catarrhal as well as croupous, when treatment is administered in the early stages. In pleurisy likewise, especially in the serous form, rapid reduction of fluid has been noted from hypertonic infusion following puncture. A diminution in bronchial secretion is probably, in part, the reason for the alleged benefit secured by hypertonic calcium chloride infusion in tuberculosis. Litchfield,[132] John,[133] and Wells and Blankinship[134] report favorable results from the use of large quantities (from 250 to 500 cc.) of hypertonic (10 to 25 per cent) sugar solutions in infectious diseases, chiefly in pneumonia. Baradulin[135] recommends such injections in sepsis. The manner in which these therapeutic effects are produced has not yet been sufficiently determined.

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Opitz[136] reports a shortening of the bleeding time, probably due to the washing into the blood stream of thrombokinase-containing tissue fluid, resulting from the intravenous injection in children of 50 Gm. of dextrose in 50 per cent solution, approximately 1.75 Gm. per kilogram of body weight. In nearly every case, chill and fever sometimes of considerable degree with severe headache was produced by these injections. No clinical benefit was noticable from this treatment in any one of the cases studied (pericarditis, asthma, influenza, bronchiectasis). As a result of clinical experience, Lowy[137] considers glucose infusion of little value in internal hemorrhages, excepting perhaps in intestinal hemorrhage, in which the desired result seems to be obtained in a few cases.

Increasing the effect of various other medicaments, uch as digitalis and morphine, seems to be a general roperty of hpyertonic infusions. This is probably due o improved absorption from the intestine or skin and to he tissue currents set up by the osmotic disturbance. ossibly in case of quinine when used in the treatment f malaria, this effect might be undesirable, as we aim t a maximum effect on blood and minimum action on he tissues.

Most important, if confirmed, would be the observaions made regarding improved action from arsphenamine when combined with hypertonic infusion. Foley[138] has shown that so great is the upset in the normal relationship of the spinal fluid formation that, shortly after a hypertonic solution enters the blood stream, a complete reversal of the flow of cerebrospinal fluid occurs, even to the extent of intraventricular absorption of fluid through the choroid and ependyma, instead of its secretion from them. The restoration of the spinal fluid from the blood stream begins about the sixth hour after 100 cc. of a 15 per cent saline solution has been injected intravenously. In view of these findings, Corbus, O'Conor, Lincoln and Gardner[139] employed preliminary hypertonic saline infusion in conjunction with neo-arsphenamine injection with the hope of increasing the elimination of arsenic into the cerebrospinal fluid. They believed that, if the arsenical is injected just at the time when the increased restorative formation of cerebrospinal fluid is taking place, a much larger quantity of arsenic is carried into the subarachnoid spaces with the fluid. Six hours after 100 cc. of hypertonic saline solution (15 per cent), warmed to body temperature, has been given intravenously by the gravity method, 0.9 Gm. of neo-arsphenamine was given intravenously. In one or two hours, lumbar puncture was performed and from 10 to 15 cc. of fluid withdrawn. Nourishment was given four hours after the neo-arsphenamine injection, none before. All the twenty-eight patients treated according to this plan showed definite subarachnoid involvement. Some of them obtained their first negative serologic findings following this form of therapy. Arsenic was found in the spinal fluid in all but two patients (93 per cent). The amount of arsenic varied from a slight trace to 0.01 Gm. per cubic centimeter. The authors therefore conclude that the ideal time for intravenous injection of remedial agents is during the period of increased fluid formation by the choroid plexus and perivascular spaces. Arsenic penetration following this method is as constant as, or better than, after any other method that has been suggested up to the present.

Scholtz, Richter and Steinberg[140] have a different view of the reason for improved clinical results from a similar combined treatment. They believe that dextrose injections in syphilis exert a stimulating effect on the proliferation of spirochetes, which in consequence become more susceptible to arsphenamine. Cheinisse,[141] reviewing some recent reports on intravenous injection of hypertonic dextrose solution either preceding or accompanying arsphenamine, emphasizes the point that this association wards off shock and some of the other untoward by-effects of arsphenamine treatment.

Scholtz, Richter and Steinberg studied the question whether similar effects might not be obtained in gonorrhea. They found indeed that, after intravenous injection of 30 cc. of 50 per cent dextrose solution, there occurred a transient increase in the proliferation of the gonococcus, and that the organisms were now more sensitive to the influence of bactericides. They also considered such injections an excellent provocative measure. As a result of experiments with eighty-three patients, they arrive at the conclusion that, by means of this combined therapy, gonorrhea can be cured in about one-half the time required with purely local therapy. The percentage of cures after two weeks of combined therapy was about equal to the results of four weeks of local treatment. In complicated cases of gonorrhea, especially in prostatitis, the results were less favorable. The dextrose was generally injected every other day during the first week and every third day during the second week. For local treatment, mild silver protein was used in increasing strengths from 0.5 to 3 per cent. It is considered important to employ such an injection very soon after each dextrose injection. Under this treatment the gonococci disappear nearly always after the second injection and sometimes after the first; i. e., from three to six hours after beginning the treatment, and remain absent. The authors believe that probably many other intravenously injected substances have a similar mode of action.

(To be continued)

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Unit of Conduction.—The vertebrate spinal cord is a structure of such extreme complexity that it is well nigh impossible from a study of its reactions to decide whether we must consider the neuron as the unit of conduction or whether we must attribute a capacity for conduction to its constituent neurofibrils.—Tiegs, O. W.—*Australian J. Exper. Biol. & M. Sc.*

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SATURDAY, AUGUST 7, 1926

A DEFENSIVE MECHANISM IN THE BODY

The discovery of various bacteria specifically concerned with certain diseases, and the demonstration of the etiologic rôles of micro-organisms in the development of pathologic conditions, was logically followed by attempts to secure germicidal effects in an attack on the invaders. Particularly in the case of suppurating wounds, antisepsis found abundant opportunity for valuable application. It represented Lister's plan as an outcome of the pioneer researches of Pasteur. Antisepsis has not lost its significance even today; but medicine no longer puts its reliance solely on the possible protective potency of germicidal drugs, useful though these may be in many emergencies. We have learned that in the fight against bacteria in the organism there are potent agencies that the body itself may bring into play. Resistance to disease of microbic origin is often endogenous in character. In some instances species resistance, for example, may be so perfect that it amounts to absolute immunity against certain bacteria. Sometimes immunity of varying effectiveness is gradually acquired. The protective forces here referred to are not like the man-made antiseptics—mercuric chloride, phenol, iodine or the like—but are classed grossly as "antibodies," pending the development of more adequate chemical information about the "immune substances" and "lytic principles." Chemistry has not yet solved the mysteries of the empiric discoveries of antibacterial immunization.

The fate of bacteria within an infected body is further rendered uncertain by an added protective mechanism represented in cell ingestion, or phagocytosis. In the defense of the body against invasion by bacteria and other foreign substances there may be, first, an active motion of special types of cells toward the point of attack and, secondly, an act of ingestion of the noxious material. Thus, both fluids and cells in the body serve to avert harm, to provide inhibition, destruction or complete immunity toward objectionable invasion. The glamor of earlier successes of chemical antiseptic procedures in practical medicine dimmed the contribution of the less spectacular bodily modes of resistance. Only in recent years has their significance been observed in a better light and larger reliance placed on them. Students of the subject are earnestly considering whether it would not be therapeutically profitable to devote more energy to the promotion of processes for supporting or augmenting the natural defenses of the body.

The significance of these factors is stressed in connection with such problems as are presented by puerperal infection. It is agreed that the direct introduction of pyogenic bacteria into the genitalia by means of hands or instruments represents an important source of infection; but the question of auto-infection as well as of nature's mode of protecting the puerperal woman still remains debated. Mere prophylaxis has not yet eliminated the danger in everyday experience. An obstetrician has remarked that if we take into account the paths by which bacteria may be absorbed from the surface of the slight or severe cervical lacerations that occur in almost every labor, we may say that they travel through the cervical wall by way of the lymphatic vessels or the lymph spaces, as the lymphatics draining the upper part of the vagina and cervix unite at the lateral margin of the latter and, following the course of the vessels, pass into the dense connective tissue of the parametrium. There, according to Hofbauer's[1] studies at Johns Hopkins University, occurs a remarkable development of phagocytic tissue within the tissue spaces of the base of the broad ligament, which is particularly accentuated under the stress of prolonged labor—a period which, in his words, presents the high-water mark of macrophage activity. In explanation of the local tissue immunity, Hofbauer has found that during pregnancy a phagocytic tissue, consisting of monocytes and clasmatocytes, makes its appearance in the base of the broad ligament, and is intensified under the stress of prolonged labor, but particularly by the existence of infection. The development of this tissue from resting-wandering cells and adventitial cells can be demonstrated. One must agree with the investigator that the presence of this phagocytic tissue in the parametrium must be regarded as a prophylactic biologic reaction and as a marked protection against infection. It certainly affords a mechanism, he adds, for the development of local immunity in a region abundantly predisposed to infection, and must be of service in doing away with débris and bacteria. The development of lymphoid tissue within the walls of lymphatics in the parametrium must be regarded as an additional defensive mechanism.

The observations of Hofbauer are, as he points out, in harmony with the current conception that local tissue immunity constitutes one of the most important medical problems. There is an increasing impression, he notes, that even the temporary limitation of an infection resulting from the invasion of bacteria may determine the eventual outcome, and, further, that local reaction at the portal of entry tends to prevent general involvement. Local resistance in various organs, Hofbauer adds, is attributable to the phagocytic action of macrophages, and there are abundant indications pointing to the active rôle which this type of cell plays in defensive processes, not only against chronic infection, but against acute phenomena as well. The stimulation of the cellular reaction of the parametrium, if it is practicable and advantageous, in the treatment of such conditions as puerperal infection, thus becomes a problem of scientific therapy.

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LIVER INJURY FROM BILIARY STASIS

The physiology of the bile has received much deserved attention for several years. Our knowledge of the functions of the biliary tract, notably the gallbladder and the common bile duct, has been greatly augmented.[1] The origin and fate of the bile pigments have attained an entirely new interpretation.[2] With respect to the bile salts, Whipple[3] wrote, only four years ago, "If our ignorance about the complete story of the bile pigments is disturbing, then our lack of understanding as to the source and internal metabolism of the bile acids is pathetic—this in spite of much careful study and investigation." Heretofore there has been a tendency to consider the biliary acids and pigments in the same category with respect to their physiologic history. There are increasing indications, however, that the components of the bile *should* be regarded as dissociated in this respect. It has been shown experimentally in cases of poisoning which led to jaundice that the production of bile acids is diminished while the formation of bile pigments may even be above normal.[4] There are extrahepatic factors concerned that may not apply with equal force to the two.

In jaundice produced by obstruction of the biliary passages and consequent stagnation of the bile, the characteristic components of the latter are supposed to appear in the urine. With respect to the bile acids there are contradictory statements. An experimental investigation of the subject by Brakefield and Schmidt[5] at the University of California Medical School showed, as might be expected, that the production of jaundice was followed by urinary excretion of bile acid and bile pigment. The output of bile acid decreased with time and finally became a small quantity. On the other hand, a low but fairly constant excretory level was maintained for the biliary pigment. It has been known for some time that the output of the acids, supposedly manufactured in the liver, is greatly decreased in chloroform intoxication, which admittedly injures the hepatic cells. Brakefield and Schmidt believe that the gradual similarly diminished urinary output of the bile acids during protracted obstructed jaundice argues for impairment of the function of the liver under such conditions. They are confirmed in this conclusion by the observation that the ability of the jaundiced dog and rabbit to detoxicate benzoic acid is markedly diminished after the onset of jaundice. Histologic studies of the liver some time after the onset of biliary stasis also point to morphologic changes along with the functional manifestations. If these observations are verified in man, it will not be easy to escape the significant conclusion that liver injury may result even from uncomplicated biliary stasis. A greater pathogenic importance thus becomes associated with jaundice, which is often regarded as a somewhat inconsequential, though disagreeable, symptom.

THE CONTAGIOUSNESS OF CANCER

One of the main difficulties in accepting the hypothesis that cancer is caused by specific infectious agents of any sort lies in the well established fact that cancer is not contagious in any recognizable degree, if at all. To be sure, the older literature often tells of cancer houses, cancer epidemics and cancer wells, and there has been much discussion of cancer à deux. But the evidence of contagion of cancer as implied in these discussions has failed to meet critical investigation, and at present none of it is accepted as established by most of the best authorities on cancer. Even much that has been written of contact infection between two surfaces of the same person, as lip to lip or tongue to cheek, is of doubtful authenticity. It is indeed striking that the innumerable opportunities for infection of surgeons and pathologists from the cancers they handle so freely have failed heretofore to lead to transmission of the disease, if it is the result of infection by a specific cancer parasite. Certainly these members of the medical profession get infected often enough with the various bacterial diseases of their subjects, so why not with cancer if it is an infectious disease?

Since the rediscovery by Leo Loeb and Jensen that the cancers of animals may be transplanted from animal to animal of the same species under proper conditions, it has been *a priori* possible that cancer transplantation from man to man might take place; but that such a thing has ever happened has not yet been satisfactorily established. There is a report, attributed to Cornil, that some unnamed surgeon, of more zeal than conscience, grafted a cancer from one breast to another of the same person. Ewing says that during attempts at treatment of cancer by vaccines made from cancer tissue, occasionally unkilled cells set up new inoculation tumors. Nicholas Senn once grafted beneath his own skin a bit of a cancerous lymph node from a patient, but no growth resulted. Possibly other attempts have been made to transplant cancer from one person to another, but if so the results, whether negative or positive, cannot be found in the accessible cancer literature. And yet, in view of the fact of transplantation of cancer from one animal to another, it would be strange if a similar transplantation should not have sometime occurred through contact in man.

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The foregoing considerations indicate the importance of a case recently reported in the French literature[1] which is believed by the authors to be a true instance of inoculation of a man with a tumor from another person. The victim was a French medical student, who let fall a syringe with which he was aspirating fluid that had collected beneath the wound made in the amputation of a breast for cancer. The needle penetrated deeply into the palm of the student's left hand, and, as the syringe contained the cancer fluid, might well have discharged some of its contents into the deep tissues. The student cauterized the wound himself with a galvanocautery, and the immediate effects were slight. Nothing more was observed for two years, when there began to be some pain in the hand, followed by the development of a hard swelling at the site of the needle puncture. A month later the left axillary glands became enlarged and were removed. The growth in the hand enlarged and began to ulcerate, so that a diagnosis of an infective granuloma was made, and the tissue was removed about six months after the growth was first noticed. A month later subcutaneous nodules had appeared in the skin of the forearm, and the local growth recurred, establishing beyond doubt the malignant character of the process. Therefore the left upper extremity was removed by a shoulder joint disarticulation; six months later there were no evidences of recurrence of the growth.

This history seems to be clear cut and, as far as known, the first one reported, of accidental inoculation of a medical attendant with cancer from a patient, and as such it is reported. But, unfortunately or otherwise, the evidence is by no means convincing that this is a true instance of inoculation of cancer from man to man, for the reason that the cancer of the breast of the first patient was a carcinoma, composed of solid masses of epithelium in atypical arrangement; the growth arising in the hand of the medical student was a spindle cell sarcoma, not at all resembling the breast cancer. Had the growth that arose at the site of the needle puncture been a carcinoma similar to that of the breast, there would have been no room to doubt that it was an example of transplantation cancer in a human subject. But the sarcomatous growth that was present might well have arisen as a sequel of the needle trauma independent of the contents of the needle and the syringe, and this may be the correct explanation of the whole matter. Yet the fact that the growth in the hand was a sarcoma does not exclude the possibility that it was the result of implantation from the breast cancer, for in experimental transplantation of tumors in animals it has occasionally been observed that carcinomatous transplants may in time develop sarcomatous elements from their stroma which eventually entirely replace the carcinomatous elements. Such a change might have occurred in this case, although such a transformation in a first implantation is extremely improbable. Or, one may argue that there was transmitted a cancer virus which has the capacity to produce either carcinoma or sarcoma, an hypothesis that will seem plausible to some, fantastic to others. At any rate, this case is by no means a proved instance of transplantation or inoculation of cancer from one person to another, for we have no possible way of determining that the sarcoma of the hand did not arise solely because of the trauma of the needle. The case is of great importance as being apparently the nearest thing to human cancer inoculation that has ever been observed, and it emphasizes anew the fact that cancer is not contagious or infectious in any ordinary sense, since even the single possible exception does not fully establish itself.

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Current Comment

THE CALORIGENIC ACTION OF *EPINEPHRINE*

Among the numerous drugs and the various hormones now known to produce specific effects in the organism there are few that act preeminently to influence metabolism directly. Thyroxin and thyroid gland substance have long been conspicuous as promoters of heat production through stimulation of basal metabolism; and of late the hormone of the suprarenal glands, epinephrine, has been demonstrated to exert an unmistakable calorigenic action. Although this has been recognized since 1909,[1] its locus has never been accurately determined. The muscles, liver and nervous tissues have all been implicated by one investigator or another. A recent experimental investigation by Hunt and Bright[2] at the Harvard Medical School indicates, however, that epinephrine has a general calorigenic action on tissue metabolism. This was ascertained by the ingenious plan of ascertaining the effects of the hormone on both the intact animal and on organisms from which various groups of tissues had been partially or completely eliminated. Thus, if the metabolic response to epinephrine was notably lowered after the removal of certain tissue, it would indicate that the latter had been specifically concerned in the action. The approximate uniformity of the percentage rises of metabolism of entire and "reduced" animals indicates that the response is not concentrated in any of the eliminated tissues—neither in the muscular extremities nor in the visceral organs—but is general in distribution. This is in harmony with the suggestion of Boothby and Sandiford[3] of the Mayo Foundation several years ago.

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[2] Hunt, H. B., and Bright, E. U.: Studies of the Conditions of Activity in Endocrine Glands, XVIII, Locus of the Calorigenic Action of Adrenalin with Observations on Tissue Metabolism, Am. J. Physiol. 77:353 (July) 1926.

PROTEINS AND CELL GROWTH

The possibility of cultivating isolated tissue cells artificially, apart from the organism from which they were secured, early raised the hope that the technic introduced into biology by Harrison would pave the way for a much better understanding of the fundamental principles of nutrition. The phenomenon of growth presented by this method is little less than startling. It is reported from Carrel's laboratory of the Rockefeller Institute for Medical Research[4] that pure strains of fibroblasts or of epithelial cells increase in mass in an unlimited manner, when they are cultivated in plasma and embryonic tissue juice. For fourteen years, colonies of a strain of fibroblasts have doubled in size every forty-eight hours in such a medium. Pavement and thyroid epithelium also have been found to manufacture unlimited amounts of protoplasm from the components of embryonic juice. Attempts to replace this "natural" medium by artificially prepared nutrient solutions have not heretofore been attended with success. The use of amino-acids, which seem to serve successfully in place of proteins in the nutrition of animals, has left investigators in the lurch. Until recently, embryonic juice has been the only material that has been found to maintain epithelial cells and fibroblasts in a condition of true cultivation. Having observed that the nitrogenous substance utilized by the growing tissue cells is the protein itself in the nutrient medium, Carrel and Baker attempted to ascertain what degradation products of protein might facilitate increase in the mass of isolated tissue cells, for it is scarcely to be supposed that the latter would utilize directly the intact protein. Success attended the use of the higher cleavage products secured by partial hydrolysis. Proteoses prepared from various proteins, foreign as well as those from embryonic sources, were effective. Hence, the investigators now believe that a specific substance or hormone is not required for the multiplication of cells, but only the proper nutrient materials. At last, Carrel and Baker remark, the chemical nature of the nitrogenous substances that are used specifically by tissue cells in the process of multiplication has been discovered. The synthesis of protoplasm by these cells, when fed on proteoses, leads one to suppose that the marvelous effect of embryonic juice on tissue growth is merely due to a special condition of its proteins, which renders possible their splitting into proteoses by the action of the fibroblasts and epithelial cells.

THE VIRTUES OF LEMONS

While the orange is enjoying an increasing vogue as the result not only of its delectable flavor but also of its demonstrable richness in vitamins, its companion citrus fruit the lemon likewise seems destined for merited greater recognition. Sweetness and tartness have always vied for favor in the world of gustatory delights; even a taste of bitterness may not be objectionable unless the cup runneth over. Agreeable aroma often caps the climax of satisfaction. When the older pharmacists introduced tinctures and extracts of the peel of the orange and the lemon into their stock in trade, they could not have foretold what virtues these liquids might conceal.[1] The latter were intended primarily as flavoring agents, and they have lost their vogue as pharmacopeial potions. Modern researches have demonstrated, however, that not only the tasty juices but also the usually discarded peel, both the flavedo and the albedo portions, contain vitamin. In 1920, Osborne and Mendel[2] demonstrated that the white rind (albedo) contains vitamin B; Cooper[3] found vitamin A in the ether extract of the peel of the orange, lemon and grapefruit; and now Willmott[4] of Cambridge, England, has demonstrated that vitamin B is present in appreciable amounts in the rind of the fresh lemon and also in alcoholic extracts prepared according to pharmacopeial directions.

CRYSTALLINE TUBERCULIN

The late Professor Meldola once said that original research is in itself the most powerful weapon that has been or ever can be wielded by mankind in struggling with the great problems which nature offers on all sides for solution. To this may be appended Huxley's comment that what people call applied science is nothing but the application of pure science to particular classes of problems. The opportunity for chemistry in the development of medicine was never more promising than at the present time. The medication of the middle ages, the heritage of a belief in magic, is passing. Therapeutics is becoming rationalized. The extraordinary synthetic powers of modern organic chemistry have led to the production of new compounds with selective actions on the body; in some cases these can be intensified or modified at will. Chemistry has also enabled us to isolate and identify potent components of the tissues and secretions of the body, and thus to gain a more intelligent insight into the real nature of physiologic and pathologic processes.[1] Illustrations of some of the recent contributions of chemistry to medicine were reviewed in a recent issue of THE JOURNAL.[2] Only a few months have elapsed since the triumph of the isolation of crystalline insulin was announced in these columns.[3] The crystallization of a compound is particularly satisfactory to the chemist because such structural exhibition is regarded as an index of comparative purity. Now the isolation of a crystalline protein with tuberculin activity has been reported by Dr. Florence B. Seibert[4] of the Sprague Memorial Institute in Chicago. The crystallized product elicits the characteristic skin reaction in tuberculous subjects. Chemically, it is shown that wherever the activity is lost, following enzyme treatment, there occurs also a corresponding reduction in whole protein, with an increase in proteose and residual nitrogen. Insulin also has many of the marks of a protein-like substance. When Mulder coined the word "protein" in 1839 he could scarcely have anticipated the manifold fundamental importance of the group of substances designated thereby.

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[3] Boothby, W. M., and Sandiford, Irene: Am. J. Physiol. **59**: 463, 1922; **66**: 93 (Sept.) 1923.

[4] Carrel, Alexis; and Baker, Lillian E.: Chemical Nature of Some Substances Required for the Growth of Fibroblasts and Epithelial Cells, Proc. Soc. Exper. Biol. & Med. **23**: 627 (May) 1926.

[1] Descriptions of U. S. P. products derived from the orange and the lemon are given in the Epitome of the Pharmacopeia of the United States and the National Formulary, American Medical Association, 1916, under Aurantii Amari Cortex and Limonis Cortex.

[2] Osborne, T. B., and Mendel, L. B.: The Occurrence of Water-Soluble Vitamin in Some Common Fruits, J. Biol. Chem. **42**: 465 (July) 1920.

[3] Cooper, Ethel: The Presence of Vitamin A in the Peel of Common Citrus Fruits, Proc. Soc. Exper. Biol. & Med. **18**: 243 (April) 1921.

[4] Willmott, S. G.: The Vitamin B of Lemon Rind, Biochem. J. **20**: 31, 1926.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Hospital News.—The Los Angeles Children's Hospital recently celebrated its twenty-fifth anniversary; of the 2,370 children cared for in the last year, 1,053 were charity patients.——The contract has been let for the erection of the new $1,000,000 Good Samaritan Hospital, Los Angeles.

Personal.—Dr. Philip K. Brown, San Francisco, has been appointed editor of *Better Health*, effective, August 1.——Philip E. Smith, Ph.D., associate professor of anatomy, University of California, has accepted a similar position at Stanford University, beginning next September. Dr. Smith has been at the state university for fourteen years.

Suit Follows "Permanent Shave."—George Scott, a motion picture appliance manufacturer in Los Angeles, recently brought suit for $175,000 damages against Jules M. Marton, inventor of a so-called method of removing hair, it is reported. Scott claims that his face was injured when Marton gave him a "permanent shave." In 1924, Marton is reported to have pleaded guilty to violation of the medical practice act and to have paid a fine of $100.

Meeting of Health Officers.—At the meeting of the League of California Municipalities, August 16-20, Dr. John L. Pomeroy, Los Angeles, will discuss "Needed Public Health Legislation"; Dr. Walter W. Cress, Sacramento, "The Control of Smallpox"; Dr. Virgil G. Presson, Santa Ana, "Diphtheria Immunization During the Past Year," and Dr. Ellen S. Stadtmuller, San Francisco, "The Preschool Drive." At the Round Table luncheon discussions, the subjects will be child welfare, garbage and sewage disposal, epidemiology, food inspection, and laboratory diagnosis.

COLORADO

Society News.—Dr. John R. Ransom, Denver, addressed the San Juan Medical Society, July 10, on "Cure of Cancer by Roentgen-Ray Therapy"; Dr. Allen J. Nossaman on "Medical Ethics," and Arthur C. Cross, A.M., of the University of Colorado Extension Division, on "Child Welfare Clinics."——The San Luis Valley Medical Society met at Saguache, July 10, and was addressed by Dr. John B. Crouch, Colorado Springs, among others, on "Differential Diagnosis of Chest Conditions." There was a dinner at the Saguache Hotel, where the physicians' wives were entertained at cards during the scientific meeting. Dr. Isaac L. Gotthelf was elected president of the society; Dr. Arthur B. Gjellum, vice president, and Dr. Paul K. Dwyer, secretary.

CONNECTICUT

Mental Hygiene Program at Yale.—With the aid of $50,000 a year for five years from the Commonwealth Fund, Yale University will provide this fall a psychiatric program to assist students in their problems in the field of mental hygiene. The program, outlined in *Medical Hygiene Bulletin*, includes lectures to sophomores to give them a broad historical concept of life with emphasis on the adaptation of the individual to his environment. The lectures for juniors and seniors will cover problems associated with vocational aptitudes. For freshmen, there will be voluntary conference groups in which the mental hygiene point of view will be presented and through which the students will become acquainted with the staff of psychiatrists; these groups will be limited to fifteen or twenty men. From time to time, general lectures on mental hygiene will be given to a larger number of students. Preventive work will be carried on with students who wish aid in adjusting minor difficulties; persons acutely ill will be reached through the university department of health, or through their own initiative, or through faculty cooperation. The resident staff will comprise Dr. Lloyd Thompson, clinical instructor in psychiatry at Yale, Dr. Clements C. Fry, assistant in psychiatry at Harvard Medical School, and Major Harry N. Kerns, Medical Corps, U. S. Army, who has been awarded a fellowship by the National Committee for Mental Hygiene; the advisory committee includes Dr. Arthur H. Ruggles, Dr. Edward A. Strecker and Dr. Frankwood E. Williams, and Dr. Stewart Paton, chairman of the resident group in psychiatry and mental hygiene.

Clinical Congress of State Society.—The second clinical congress of the Connecticut State Medical Society will be held in Sprague Memorial Hall, Yale University, New Haven, September 21-23. In addition to the speakers announced in THE JOURNAL, June 19, there will be Dr. Allen K. Krause, Johns Hopkins University, Baltimore, "Trend of Medical and Surgical Treatment of Tuberculosis"; Dr. William J. MacDonald, St. Catherines, Ont., "Some Clinical Results with Liver Extract in Arterial Hypertension"; Dr. Haven Emerson, professor of public health administration, Columbia University College of Physicians and Surgeons, New York, "Periodic Medical Examination"; Dr. James W. Sever, Harvard University Medical School, Boston, "Physiotherapy: Its Use by the General Practitioner"; Dr. Philip D. Kerrison, New York, "Treatment of Ear Diseases by the General Practitioner"; Dr. C. Morton Smith, Harvard University Medical School, "Certain Phases of Congenital Syphilis"; Prof. Edouard A. Rist, Paris, France, "Tuberculosis and Pregnancy"; Dr. Lester R. Whitaker, Harvard Medical School, "Present Status of Gallbladder Diagnosis"; Dr. Frederic J. Cotton, Boston, "Fracture of the Hip"; Dr. Louis H. Clerf, Philadelphia, "Diseases of the Larynx," and Dr. Roy G. Hoskins, Columbus, Ohio, "Critique of Gland Therapy." The ten dollar fee for the congress includes admission to all sessions and to the smoker, also luncheon on each day, parking space and garage, and a copy of the abstracts of the papers, but not the use of rooms in the dormitory, breakfast or dinner. Inquiries should be addressed to Dr. Creighton Barker, 129 Whitney Avenue, New Haven. The congress is planned particularly for the general practitioner, and physicians outside the state of Connecticut will be welcome.

FLORIDA

Dr. Spyros Vamvas Denied New Trial.—The circuit court of appeals in New Orleans has denied a new trial to Dr. Spyros D. Vamvas, Jacksonville, who, about a year ago, it is reported, was sentenced to ten years in prison for violation of the Harrison Narcotic Law. Dr. Vamvas was being sought at the time of this report; his bondsmen had been notified that the $10,000 bond had been ordered estreated.

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[1] The Future Independence and Progress of American Medicine in the Age of Chemistry, Report of Special Committee, American Chemical Society.

[2] Some Recent Contributions of Chemistry to Medicine, editorial, J. A. M. A. **86**: 1838 (June 12) 1926.

[3] Crystalline Insulin—Another Chemical Triumph, editorial, J. A. M. A. **86**: 350 (Jan. 30) 1926.

[4] Seibert, Florence B.: The Isolation of a Crystalline Protein with Tuberculin Activity, Science **63**: 619 (June 18) 1926. Long, E. R., and Seibert, F. B.: The Chemical Composition of the Active Principle of Tuberculin, I-VII, Am. Rev. Tuberc. **13**: 393, 1926.

Society News.—At a banquet given by the Palm Beach Medical Society, July 22, a medical society representing the twenty-first judicial district was organized, and Dr. Hady C. McDermid, Okeechobee, was elected president; Dr. James W. Bishop, Alachua, vice president, and Dr. Grover C. Hardie, Fort Pierce, secretary. Among the speakers was Dr. H. Mason Smith, Tampa, president of the Florida State Medical Association.

Personal.—Dr. Charles H. Farmer left the service of the state board of health as medical officer for the Jacksonville district, recently, to engage in practice at Lakeland.——Dr. Elliott M. Hendricks, Fort Lauderdale, has been appointed superintendent of the Edwards Hospital, to succeed Dr. Russell R. Hippensteel, who has returned to Indianapolis.——Dr. Wyman W. Harden has been appointed commissioner of health of St. Petersburg, to succeed Dr. Ray H. Davies.

Postgraduate Course on Venereal Disease.—The state board of health conducted in June a short postgraduate course in Jacksonville for the study of venereal diseases in cooperation with the U. S. Public Health Service and the American Social Hygiene Association. Fourteen physicians from widely separated parts of the state took the course, and six physicians from Jacksonville. There were lectures, clinics and motion pictures. The Duval County Hospital provided the accommodation for these meetings.

IDAHO

Society News.—Physicians of Latah, Benewah and Clearwater counties have organized a Tri-County Medical Association, electing Dr. John W. Stevenson, Moscow, president; Dr. Frank C. Gibson, Potlatch, vice president, and Dr. John H. Einhouse, Moscow, secretary-treasurer.

Personal.—Dr. John H. Sturges, Coeur d'Alene, has been appointed in charge of a mission hospital for the Seventh Day Adventists in the Belgian Congo region of South Africa for a period of seven years; Dr. John T. Wood will succeed Dr. Sturges as secretary of the Kootenai County Medical Society for the remainder of the year.

ILLINOIS

Inmates of State Institutions.—The state department of public welfare reports that there were 33,630 inmates in the twenty-six state institutions, June 30; 20,256 were in hospitals for the insane; 4,166 in institutions for the feebleminded, and 5,708 in penal institutions. The department of welfare then had 4,845 employees. The cost per capita for maintaining these institutions during the last year was $101.55; the total cost was $11,075,527.

Unlicensed Chiropractors.—Among the chiropractors arrested several weeks ago in Rock Island County on charges of practicing without a license, four have been found guilty and are awaiting sentence; four cases have been dismissed, two promising to suspend practice in Illinois, and two promising to qualify for the state examinations. John Lee, East Moline, the last one arrested in this lot, was found guilty in the Rock Island County court, July 13.

Society News.—Dr. William [illegible] uis, addressed the Jefferson County [illegible] unt Vernon, June 17, on "Diagnois and [illegible] of the Heart," illustrated with lantern slides. The society has twenty-eight members, but there were seventy-five physicians in attendance.——Dr. Harold M. Camp, Monmouth, secretary, state medical society, addressed the Ogle County Medical Society, Oregon, recently on "Acute Osteomyelitis."

Personal.—Dr. Alexander L. Darche has been transferred from the Anna State Hospital to the Lincoln State School and Colony.——Dr. and Mrs. Arthur G. Meserve, Robinson, celebrated their golden wedding anniversary, July 19.——Dr. Clarence J. McCullough, who has been radiologist at the Decatur and Macon County Hospital for about four years, has resigned on account of poor health.——Dr. Clyde H. Cable tendered his resignation as superintendent of the Elmgrove County Sanitarium, Bushnell, effective, July 31.——Dr. Haim I. Davis, Chicago, has been appointed clinical professor of psychiatry at the University of Illinois College of Medicine.

Automobiles More Fatal Than Infectious Diseases.—The mortality from automobile accidents last year in Illinois was 23 per cent higher than it was in 1924. Automobiles were directly responsible for more deaths than diphtheria, measles, scarlet fever, typhoid and whooping cough combined, which caused a total of 1,530 deaths in the state, while automobiles caused 1,548. The state department of health shows that persons on foot fare worse than those who ride in machines, as far as fatalities are concerned; 833 of those killed were pedestrians. The number of motor vehicles in the state increased more than 30 per cent during 1925, while in the country at large the increase was less than 13 per cent. The health department credits the decline in fatal automobile accidents in New York during 1925 to strict enforcement of a law which involves the revocation of the driver's license, to roads constructed with the safety factor in view, to vigorous patrols, and to carrying in the newspapers the names of persons whose licenses to drive have been revoked.

Chicago

Society News.—At a recent meeting of the Chicago Urological Society, Dr. Harry C. Rolnick was elected president; Dr. Russell D. Herrold, vice president, and Dr. Vincent J. O'Conor, secretary-treasurer.

Visiting European Dentists.—It has been announced that 200 European dentists will be the honored guests of the Chicago Dental Society, August 30-31, and that a number of them will appear on the program of the society at the regular September meeting, which has been advanced to the foregoing date. The guests will come to Chicago after having attended the Seventh International Dental Congress in Philadelphia.

Emergency Medical Service.—The Chicago Medical Society has arranged to cooperate with the Illinois Bell Telephone Company in providing physicians for emergency calls received over the telephone, and the society desires all its members who will accept such calls as are referred to them through the society's own exchange to send in their name and address, so that they may be registered. The telephone company in the future will refer all these calls to the telephone exchange of the medical society.

Second Course of Free Summer Clinics.—The second course of the free summer clinics at the Cook County Hospital under the auspices of the Chicago Medical Society began, August 2. There was a symposium in the surgical amphitheater, August 3, on goiter, and two symposiums, August 3, on gynecology, and nose and throat. Every physician registered was present at the appointed hour at the opening of the first session. There was continued regularity of attendance throughout, and the enthusiasm was such as to indicate that the first summer clinic was most successful. The second course will comprise much the same series of clinics as the first clinic, with the exception of six instructors and additional hours.

Liquor Licenses Revoked.—The office of the local prohibition director issued orders recently, it is reported, revoking the liquor licenses of the following:

Dr. Mary F. Adams.
Dr. Albert J. Bennett.
Dr. Julius Berliant.
Dr. William R. Campbell.
Dr. Joseph S. Cohn.
Dr. Raymond H. Davis.
Dr. Hugh M. Dewar.
Dr. Stephen D. Dillard.
Dr. William G. Elliott.
Dr. Ralph Epstein.
Dr. Julian M. Finke.
Dr. William I. Fishbein.
Dr Simon Glickson.
Dr. George W. Good.
Dr. Joseph A. Grendeske.
Dr. Harry M. Jones.
Dr. Victor Josephson
Dr. Theodore M. Kamins.
Dr. William E. Kidd.
Dr. Frederick F. Kitzing.
Dr. LeRoy P. Kuhn.
Dr. Jesse H McIntosh.
Dr. Jacob K Meyers.
Dr. William Miller.
Dr. Millicent Morden.
Dr. Frank T. Murphy.
Dr. James Murphy.
Dr. Melvin M. Newman.
Dr. Thomas J. Ney.
Dr. John J. Nolan.
Dr. Ralph C. O'Halloran.
Dr. Horace D. Reynolds.
Dr. Charles H. Richards.
Dr. Frank H. Schembs.
Dr. Irving Schwager.
Dr. Sherman L. Shapiro.
Dr. Filadelfo D. G. Silva.
Dr. Samuel Sinkler.
Dr. Leslie D. Smith.
Dr. Irving G. Spiesman.
Dr. Julius Spiro.
Dr. Julius Spivack.
Dr. Burton A. Solar.
Dr. C. Lambert Townsend.
Dr. Joseph Watry.
Dr. Abraham J. Weissman.
Dr. Gillbert H. Wynekoop.

The liquor licenses of the following drug stores, among others, also were reported revoked:

Strauss Building Pharmacy, 310 South Michigan Blvd.
Druxco Company Stores, 3139 Broadway; 6658 Stony Island Avenue, and 1100 Bryn Mawr Avenue.
Beach View Pharmacy, 4463 Broadway.
Samuel Golden's Pharmacy, 2001 Evergreen Avenue.
Aldona Drug Store, 4702 South Western Avenue.
Ogden Drug Store, 1752 Ogden Avenue.
The Grant Drug Company, 4700 Kenmore Avenue.

INDIANA

Hospital News.—Dr. Abraham R. Hollender, Chicago, addressed the staff and invited guests of the Deaconess Hospital, Evansville, June 16, on "Physical Therapy in Eye, Ear, Nose and Throat Practice."

Society News.—A banquet given under the auspices of the Logansport Dental Society, recently, was attended by about

250 physicians and dentists; Dr. Pliny G. Puterbaugh, Chicago, gave an address on "Allied Problems of Medicine and Dentistry."

Personal.—Dr. Alfred O. Adams has been appointed chief resident physician at the James Whitcomb Riley Hospital, Indianapolis, and Dr. Lewis N. Ashworth, chief resident physician at the Robert W. Long Hospital.——Dr. Henry R. Alburger has resigned as pathologist at the City Hospital, Indianapolis, and Dr. Elmer Funkhouser has been appointed to that position, effective August 1. Dr. Alburger was for years in charge of the pathologic department at Indiana University, and previously was professor of pathology at the University of Pennsylvania. He is said to have organized the pathologic department at the City Hospital in 1911, and to have been connected with it until 1916, and was reappointed in 1922. Dr. Funkhouser was in charge of this department at the City Hospital previous to the last appointment of Dr. Alburger.

KENTUCKY

Hospital News.—Dr. William M. Brown has been appointed superintendent of the new Shriner's Hospital for Crippled Children at Lexington, which is nearing completion.——Lincoln County Memorial Hospital, Stanford, was recently closed.

State Aid for Counties.—The governor has approved an appropriation of $2,500 annually to each of the counties that have established health departments; although the legislature passed a law in 1922 to aid county health work, this is the first time the counties have requested funds from the state. Mason, Boyd, Scott, Fulton, Johnson, and Fayette counties have health departments.

Society News.—Dr. Irvin Abell, Louisville, addressed the Madison County Medical Society, Boonesboro, July 14, on "Surgery of the Tuberculous."——Dr. William D. Haggard, Nashville, Tenn., formerly President of the American Medical Association, addressed the Christian County Medical Society, Hopkinsville, July 21, on "Management of Goiter," and Dr. Carl R. Crutchfield, Nashville, on "Blood Transfusion."

Tuberculosis Clinics.—The Mason County health director has arranged a tuberculosis clinic to be held in the offices of the county health department, August 10-12, which will be in charge of Dr. Paul A. Turner, state tuberculosis sanatorium, Louisville, and Dr. James S. Lock, secretary, Kentucky Tuberculosis Association. All persons in Mason County are invited to attend the clinic; those suspected of having incipient tuberculosis will be examined and advised without charge.

MICHIGAN

Personal.—Dr. Gertrude D. C. O'Sullivan, who resigned as city physician of Port Huron, May 1, has been reappointed to that position to succeed the late Dr. William B. James.——Dr. Ambrose G. Cowles has been appointed health officer of Durand.

Hospital Dedicated.—The governor made the principal address at the dedication of the new $270,000 James Decker Munson Hospital and its recently completed memorial pavilion, Traverse City, July 28-30; other speakers included Dr. Victor C. Vaughan, Washington, D. C., Dr. Hugh Cabot, Dr. Frederick A. Coller, Dr. Carl E. Badgley, Dr. Richard M. Olin, and Dr. Arnold L. Jacoby. There was a mass meeting, a day of clinics, and a dinner given by the Grand Traverse-Leelanau County Medical Society in honor of the governor and other state officials.

MINNESOTA

Dermatologic Meeting.—The Minnesota Dermatological Society met, July 10, in Rochester; there was a demonstration of cases at the Worrell Hospital and a dinner at the Golf Club; Dr. Oliver S. Ormsby, professor of dermatology, Rush Medical College, Chicago, was the principal speaker.

Dr. Weeks Honored.—About 400 friends of Dr. Leonard C. Weeks held a basket picnic in the city park, Detroit, July 16, to celebrate his return to health and to that community, where, for many years, he has practiced medicine and served the city as mayor, member of the school board, and in other civic capacities. The present mayor, Mr. Knudson, the toastmaster, introduced the speakers, associate physicians, the editor, and other persons prominent in the community. The mayor then presented to Dr. Weeks a white silver watch and chain as a token of the appreciation of his long and faithful service. Dr. Weeks came to Detroit in 1896.

New Fellows at Mayo Foundation.—The following physicians have recently been appointed fellows in surgery at the Mayo Foundation:

Dr. Goeffrey H. Baxter, San Francisco.
Dr. George F. Eubanks, Jr., Atlanta, Ga.
Dr. Louis M. Fowler, Greensboro, N. C.
Dr. Ben Fox, St. Louis.
Dr. Clyde H. Frederickson, Minneapolis.
Dr. Ralph W. Good, Cincinnati.
Dr. Andrew Stephens Graham, Columbia, S. C.
Dr. Kenne O. Haldeman, San Francisco
Dr. Frank Robert Hanlon, Hazelton, Pa.
Dr. Eugene L. Kellum, Norfolk, Va.
Dr. Leslie L. Nunn, Seattle.
Dr. Victor S. Quale, Rochester.
Dr. William C. Wright, Terre Haute, Ind.

The following have been appointed fellows in medicine:

Dr. Carl H. Bayha, Columbus, Ohio.
Dr. Catherine Corbeille, Detroit.
Dr. John Dwight Davis, Genoa, Neb.
Dr. Henry F. Hunt, Madisonville, Tenn.
Dr. Ferdinand M. Jordan, Scranton, Pa.
Dr. Zeno N. Korth, Omaha.
Dr. Melvin W. Binger, Dorchester, Neb.
Dr. Fay H. Squire, Aberdeen, S. D., is majoring in radiology.

MISSOURI

License Revoked.—At a meeting in St. Louis, June 28, the state board of health revoked the license of Dr. Elbert Baker of Halliday, it is reported, after a hearing on charges of "unprofessional conduct."

Hospital News.—A new hospital and dispensary is planned, it is reported, in connection with the St. Louis University Medical School, St. Louis; an option has been obtained on a site convenient to the medical school, and about $125,000 has already been pledged for the project.

Resolution About Free Clinics.—The Missouri State Medical Association passed the following resolution at its recent annual meeting in St. Louis:

> WHEREAS, The free clinics held in the various counties under the auspices of the county health units are being abused by people who are able to pay for treatment received, and
>
> WHEREAS, The regular physicians in such counties believe that such abuse is unfair and unjust to them as well as to the entire tax paying citizenship, therefore, be it
>
> *Resolved,* That this association does not approve of such abuse, and, be it further
>
> *Resolved,* That we endorse any plan that will do away with such abuse, and we recommend that any one applying for treatment at these clinics must have a statement signed by two reputable citizens of their community that the person applying for such treatment is not able to pay for treatment, and we further recommend that the county health officer and county nurse answer only calls that are endorsed by the physicians from the community wherein they originated where possible to obtain such endorsement; but where such endorsement cannot be obtained, the health officer and county nurse may use their own judgment about answering calls.

NEW JERSEY

Society News.—The Atlantic County Medical Society held its annual outing at Seaview Golf Club, June 10; a testimonial dinner was given in the evening to Drs. George Scott and Philip Marvel, Sr., Atlantic City, on which occasion Dr. Hobart A. Hare, professor of therapeutics and materia medica, Jefferson Medical College, Philadelphia, gave an address.——Col. Charles M. Gandy, U. S. Army, retired, has been elected censor of the Cape May County Medical Society, to succeed the late Dr. Virgil M. D. Marcy, Jr.——The Medical Society of New Jersey at its one hundred and sixtieth annual meeting, Atlantic City, passed a resolution authorizing the establishment of permanent headquarters for the society; it was also voted to form a women's auxiliary, and Mrs. Samuel Barbash, Atlantic City, was elected chairman.

NEW YORK

Society News.—Dr. James H. Lewis has been elected president of the Buffalo Surgical Society; Dr. Herbert A. Smith, vice president; Dr. Frank W. McGuire, treasurer, and Dr. Julius Richter, secretary.

Personal.—Dr. Doris A. Murray, formerly in charge of the maternity division, Maryland State Health Department, has been appointed director of the maternity, infancy and child hygiene department of the Cattaraugus County Health Association.

Thirty Killed by "Moonshine."—According to newspaper reports, thirty deaths were recorded in Buffalo and vicinity, July 26, resulting from wood alcohol in liquor obtained at soft drink stands. The death toll in Buffalo over the week-end was thirteen, that in Toronto and nearby towns in Ontario thirteen; the other four died at Lockport. Carl Maischos, a soft drink dealer, was arrested; James Volker, distributor of the liquor, was being sought, and John Banos, the middleman, was held on a charge of homicide. Banos claims that he returned 240 gallons of the liquor to Volker when he found it was not "fit to drink." A press report, August 2, quotes the chief chemist, bureau of internal revenue, New York, as stating that a total of 700 persons died in that city last year from "poison liquor."

Smallpox and Unvaccinated Friends.—A case of smallpox developed in Tonawanda in Erie county about June 13 in a young woman who had recently returned from a visit in Ohio; a friend of this woman developed smallpox about June 30, and a second friend developed the disease about July 3; none of these three had ever been vaccinated. The state commissioner of health says that a young man recently contracted smallpox and all members of his family were immediately vaccinated, except an elder brother, who was a conscientious objector; this brother developed one of the most severe cases of smallpox seen in the state for some time; his face was covered with pustules, and so swollen that his eyes were nearly closed. All the other members of this family escaped the disease. There were forty-three cases of smallpox in New York last month. A conductor on a passenger train running between Buffalo and Syracuse was reported to the health authorities of Buffalo, June 28, as having smallpox; he became ill, June 18, but attended to his train from June 22 to June 26, during which time he was in the infective stage.

New York City

Personal.—Dr. Isidor J. Landsman, for eleven years on the staff of the roentgen-ray department of Fordham Hospital, has been appointed roentgenologist at Bellevue Hospital.——Dr. David E. Hoag, clinical professor of neurology, University and Bellevue Hospital Medical College, recently served a fifteen day period of training with the two hundred and forty-fifth coast artillery at Fisher's Island.——Dr. Achilles Edward Davis has been made a consultant ophthalmologist to the New York Post-Graduate Medical School and Hospital.——Dr. Marks S. Shaine has been appointed an instructor in medicine, department of gastro-enterology, Columbia University College of Physicians and Surgeons.

Dr. Leonard Lincoln Landis Files Petition in Bankruptcy.—The director of the "House of Health," Dr. Leonard Lincoln Landis, filed a petition in bankruptcy in court, July 31, it is reported, placing his assets at $501,025, and his liabilities at $76,866. The assets included, as required by law, two libel suits, aggregating $450,000; among the creditors were the Schindler Advertising Agency, $3,200, and the Rotaprint Gravure Company, $8,200. Dr. Landis was recently cited to appear before the state board of medical examiners to show cause why his license to practice should not be revoked on charges of "defraud and deceit"; at that time, the New York *World* stated that he "admittedly spends around $160,000 a year advertising his 'House of Health,' at no. 140 East Twenty-Second Street, and derives a gross income therefrom computed at $750,000 annually."

Increase in Rabies in Dogs.—The city department of health considers the prevalence of rabies in dogs in New York as startling, and the increase in the number of dog bites as alarming. In the first six months of this year, 200 of the 395 dogs examined by the bureau of laboratories were positive for rabies, while during the first six months of 1925, only twenty-five among the 152 examined were positive. This is the first time in a long period that the number of positive specimens submitted for examination exceeded the number of negatives. Since 1920 there has been a constant increase in the number of persons bitten by dogs from 3,049 to 6,714, and 4,077 persons were bitten in the first half of 1926. There was only one human death from rabies in 1925, and none to date in 1926. The prevalence of rabies among dogs indicates, however, that in every instance in which the condition of the dog responsible for an injury cannot be definitely ascertained, prophylactic antirabic treatment should be administered.

NORTH CAROLINA

License Revoked.—At a special session of the state board of medical examiners, Raleigh, July 20, the license to practice of Dr. Robert S. Carroll, Asheville, was revoked by the board, it is reported; notice was immediately given of appeal to the superior court of Buncombe county.

University News.—Plans have been completed for the new Duke University at Durham with the exception of those for the medical school, it is reported; studies are now being made of the plans of several medical schools in this country. It is expected that the announcement of the appointment of the dean of the new medical school will be made within a short time.

Licenses Granted.—The state board of medical examiners granted licenses, following examination, to ninety-three physicians at its recent annual session; there were also nineteen licenses granted by reciprocity among twenty-four applications. This is said to be the first time that every applicant for examination passed the board; among those examined were four women and four negro physicians.

Hospital News.—Work will start at once on the contruction of a new $395,000 wing for the hospital for the insane at Raleigh to replace the wing destroyed by fire a few weeks ago.——Construction will begin at once on the Richardson Memorial Hospital for Negroes at Greensboro. The Richardson family gave $50,000 for this purpose, and additional gifts make possible the erection of a plant costing about $100,000.——Johnston County is preparing to hold an election on the question of establishing a county tuberculosis sanatorium.——The new Thompson Memorial Hospital was recently opened, replacing the Thompson hospital, which was burned in 1924. Dr. Thomas C. Johnson will direct the medical work.

Society News.—The Tri-County Medical Association was the guest of the Pitt County Medical Society at Greenville, July 8. Dr. David T. Tayloe, Washington, gave an address on "The Thymus Gland," and Dr. Cicero J. Ellen, Greenville, on "Defective Vision in the Young."——Dr. John Q. Myers, Charlotte, paid his initial visit as president of the State Medical Society to the Moore County Medical Society, Jackson Springs, July 5, and in an address stressed the fraternal value of medical organizations.——The members of Johnston County Medical Society were the dinner guests of Dr. and Mrs. Herbert H. Utley, Benson, in celebration of their silver wedding anniversary.——The governor has announced that the survey of women in industry in North Carolina, for which he had appointed a board to direct the survey, will not be made.

NORTH DAKOTA

Hospital News.—The government has purchased 50 acres near Fargo as a site for a new $300,000 veterans' bureau hospital.——An eleven bed community hospital, costing about $15,000, is to be erected at Ambrose.

Society News.—Dr. Stuart Pritchard, Battle Creek, Mich., recently addressed the annual meeting of the North Dakota Academy of Ophthalmology and Oto-Laryngology at Minot on "Relation Between the Upper and Lower Respiratory Tract," and Dr. William W. Lewis, St. Paul, on "Incipient Glaucoma."

OHIO

Health Department Ousted.—The mayor of Marietta, John W. Gray, declared the offices of health commissioner, city nurse, sanitary officer, health clerk and indigent physician vacant, June 16, it is reported, on the grounds that the incumbents had failed to qualify by failing to file bonds within the period required by law. Immediately thereafter, the board of health elected Dr. John B. McClure health commissioner, and filled other positions in the health department with new appointees.

District Clinics for Crippled Children.—The state department of health has initiated a plan whereby clinics for crippled children will be held for a group of counties rather than for a single county. The district clinic at Waverly, June 30, was attended by crippled children from Pile, Vinton, Scioto and Ross counties. During April, May and June, eighty-two crippled children were committed to the division of charities, department of welfare, for treatment, and they were from only thirty-seven of the eighty-eight counties in the state.

Personal.—Dr. William L. Evans, Hanover, will be a candidate at the August 10 primaries for representative in Congress from the seventeenth district.——Dr. A. Graeme Mitchell, B. K. Rachford professor and head of the department of pediatrics, University of Cincinnati College of Medicine, has been appointed a member of the board of health to succeed Dr. Archibald I. Carson.——Dr. Reverdy E. Hughson, Bluffton, has been appointed assistant superintendent of the Orient State Hospital, Orient; Dr. Hughson has been a practicing physician in Bluffton for about thirty years.

OKLAHOMA

Interest in Public Health Increasing.—The committee on health problems in public education of the Oklahoma State Medical Association recently reported that interest in public health in that state is increasing. Evidences of this are, the committee said, the addition of McCurtain and Kay counties to the list of full-time health units, of which there are now nine serving about 27 per cent of the people; many public schools have strengthened their health service and are having defects of children corrected; the state department of education has requested the department of health to outline courses on health education for teachers to use in the schoolroom; a crippled children's society has been organized and a malaria survey has just been completed by the International Health Board; the tuberculosis and cancer clinics conducted by the Oklahoma Medical Association are well attended and, as recently noted in The Journal, a campaign is being conducted to admit the state in the United States registration area; one of the Oklahoma schools won the health playwriting contest recently conducted by the National Tuberculosis Association.

PENNSYLVANIA

State Will Examine Rural Water.—A new service for the rural population of Pennsylvania has been instituted by the state department of health, which will examine on request any private water supply in the state. Heretofore the department has been able to examine only water supplies along the state highways and other private supplies used by at least six families. All farmers now may obtain this service by a request direct to the bureau of engineering, state department of health, Harrisburg.

Surgical Research.—Through a provision in the will of the late Dr. J. William White, one time John Rhea Barton professor of surgery, the University of Pennsylvania is the recipient of a $150,000 bequest, the income of which is to be devoted to a chair of research surgery. The incumbent, when appointed, will be attached to the surgical staff with clinical facilities in the University Hospital. Beds in the surgical wards will be provided for patients with lesions related to the problem or problems under investigation. The position offers unusual opportunity for the young man with surgical aspirations who, by investigation, teaching and clinical experience, wishes to prepare himself for a university career.

Petition for Merger.—The trustees of the University of Pennsylvania and the Diagnostic Hospital of Philadelphia have filed a petition in common pleas court for permission to merge the hospital with the graduate school of medicine of the university. The agreement sets forth, it is reported, that Dr. Henry B. Ingle of the Diagnostic Hospital staff shall be the first director of the diagnostic clinic of the graduate school of medicine, and that the university shall establish the clinic within a year from the date of occupancy of the hospital building soon to be erected at Nineteenth and Lombard streets, for which a permit was granted by the Bureau of Building Inspection, July 27. The agreement provides, also, that the dean of the graduate school of medicine, George H. Meeker, Ph.D., and Dr. Ingle, the director of the clinic, shall endeavor to arrange so that other members of the staff of the Diagnostic Hospital may assist in the work of the graduate school. It is further agreed that all assets of the hospital shall be transferred in fee simple to the university to be held as a separate trust fund to be known as "The Endowment Fund of the Diagnostic Hospital," to be invested and the income to be used for the general purposes of hospitals.

Philadelphia

Medal Awarded to Dr. Coolidge.—The Franklin Institute of Philadelphia has awarded the Howard N. Potts gold medal for 1926 to William D. Coolidge, Ph.D., inventor of the roentgen-ray tube which bears his name, now assistant director, research laboratory, General Electric Company. The medal will be awarded, October 20, by the institute, "in consideration of the originality and ingenuity shown in the development of a vacuum tube that has simplified and revolutionized the production of x-rays." Dr. Coolidge will then present a paper on his new cathode ray tube.

Visiting Chemists.—The largest contingent of foreign chemists that has visited America will join in celebrating the Golden Jubilee of the American Chemical Society at Philadelphia, September 6. Among the guests will be Sir James Irvine, head of the chemistry department, Scottish University of St. Andrews; Leonor Michaelis, professor of biologic chemistry, University of Berlin; Ernst Cohen, professor of physical chemistry, University of Utrecht; Camille Matignon, editor in chief of *Chimie et industrie*, and Gabriel Bertrand, professor of biologic chemistry at the Sorbonne, and chief of the service of biologic chemistry at the Pasteur Institute; J. N. Bronsted, Copenhagen; Peter Debye, Zurich, Prince P. Ginori Conti from Italy, and many others. The American Chemical Society has elected to honorary membership fourteen prominent chemists representing various countries, and they too will be present at the Philadelphia meeting. Some of these distinguished guests will lecture at various universities throughout the country following the meeting.

WASHINGTON

Sanipractors Petition for Initiative Fails.—John E. Lydon, "author of sanipractic," and his assistants have failed to secure within the time limit the 40,000 names on his initiative petition necessary for a referendum on sanipractic in November. In their sixty day drive for names, the sanipractors visited every section of the state, but were able to secure only about 23,000 names. The *Messenger* considers that this shows that public sentiment overwhelmingly sustains the action of the last legislature in acting adversely on various sanipractic bills.

Public Health League Election.—At the annual convention of the Public Health League of Washington, Spokane, recently, Dr. Adolph O. Loe, Seattle, was elected president; Dr. Herbert E. Coe, Seattle, secretary-treasurer, reelected, and the following physicians were elected district presidents: Harry E. Rhodehamel, Spokane; Edwin W. James, Tacoma; John R. Morrison, Bellingham; Floyd A. Bird, Olympia; Arthur B. Shaw, Longview; Kay England, Yakima; Edward L. Whitney, Walla Walla, and Frank A. Bryant, Colfax. The league has also an executive committee and board of trustees, each composed of physicians, a dental bureau, a pharmacy bureau, a public health nursing bureau, a general bureau, and a nutrition bureau; it works hand in hand with the state medical society and other organizations interested in public health, and in the last six years has issued more than 500,000 bulletins.

WEST VIRGINIA

Health Officer Appointed.—Dr. John Thames of Preston County has been appointed full-time health officer of Kanawha. The state medical board states that Dr. Thames has had twenty years' experience at the head of different full-time health units, many of which were spent in Little Rock, Ark., his former home, and that for the past three years he has been head of the Preston County health unit.

Mortality in 1925.—The death rate in West Virginia for 1925 was 10.48 per hundred thousand of population. According to the department of commerce, the highest rates were for diseases of the heart, 107 per hundred thousand of population; mine accidents, 32; influenza, 24; pneumonia, 79; tuberculosis, 77; nephritis, 65; typhoid and paratyphoid, 20; West Virginia was admitted to the U. S. registration area in 1925.

"Doctor" Candidates.—The *Charleston Mail* states that the unusual number of "doctors" who are candidates for nomination to the state legislature is causing comment in political circles. An incomplete list, it is said, shows that twenty "doctors" are candidates for the house of delegates, and three for the state senate. We wonder if all of them are doctors of medicine. West Virginia's last legislature passed a law legalizing chiropractic and placing two chiropractors on the public health council.

Society News.—Dr. John M. Emmett, Clifton Forge, Va., addressed the Greenbrier County Medical Society, June 15, on "Indications and Use of Radium in Pelvic Diseases."——Dr. Walter W. Point, Jr., Charleston, addressed the Fayette County Medical Society, July 13, at Montgomery, on "Toxemias of Pregnancy," and Dr. Homer A. Walkup, Mount Hope, on "Treatment of Puerperal Infections."——Dr. Robert C. Hood, Clarksburg, addressed the Marion County Medical Society, recently, at Fairmont, on "Recent Progress in Contagious Diseases."

WISCONSIN

Liquor Licenses Revoked.—The district prohibition administrator with headquarters in Chicago recently issued orders, it is reported, revoking the liquor licenses of the following:

Dr. John J. O'Hara, Milwaukee.
Dr. Thomas S. Clark, Milwaukee.
Dr. Edward J. Stone, Milwaukee.
Dr. Warner B. Strong, Milwaukee.
Dr. Robert S. Milbee, Milwaukee.

Dr. Bushong Appointed Director of Clinic.—The trustees of the Milwaukee County institutions have elected Dr. Roy E. Bushong a member of the staff of the Boston Psychopathic

Hospital, Boston, as director of the new mental hygiene clinic which the county is to establish at Grand Avenue and Fifth Street.

WYOMING

State Medical Election.—At the annual meeting of the Wyoming State Medical Society, July 12-13, Lander, Dr Vincent J Keating, Sheridan, was elected president; Drs Frank A Mills, Powell, Archie P Kimball, Casper, and Morrell Goldberg, Kemmerer, vice presidents; Dr. Edwin E. Whedon, Sheridan, secretary, Dr. Evald Olson, Lovell, treasurer, and Dr. George P. Johnston, Cheyenne, delegate to the American Medical Association The next annual meeting will be held in Cheyenne.

GENERAL

Society News.—At the recent annual meeting of the Western Physiotherapy Association, Dr. Lynne B Greene, Kansas City, Mo, was elected president, and Dr. Charles W. Fassett, Kansas City, Mo, secretary.

Bill to Pay Donors.—The House Committee on Military Affairs favorably reported a bill to provide payment for blood transfusions which are made to official patients in any government hospital. The measure provides that the sum paid shall not be in excess of $50 The legislation is necessary on account of a ruling made by the comptroller general, who has notified the Secretary of War that the practice of paying donors for blood transfusions must be stopped because there is no authority in existing law for the government to pay for such transfusions.

New County Society Secretaries.—The following physicians have recently been elected secretary of the county medical society indicated:

Dr Louis Adelsberger, Waterloo, Ill, Monroe County Medical Society.
Dr Elias M. Akins, Etowah, Tenn, McMinn County Medical Society
Dr Arlander A Barge, Newnan, Ga, Coweta County Medical Society
Dr Jesse C. Bennett, Jefferson, Ga, Jackson County Medical Society
Dr Martin A Blanton, Mosheim, Tenn, Greene County Medical Society
Dr John C. Cail, Sylvania, Ga, Screven County Medical Society
Dr Robert B Chastain, Calhoun, Ga, Gordon County Medical Society.
Dr Joshua C Collins, Collins, Ga, Tattnall County Medical Society.
Dr Walter Cox, Irvine, Ky, Estill County Medical Society
Dr B Vernon Dickson, Covington, Tenn, Tipton County Medical Society
Dr Thomas B Gay, Jr, Athens, Ga, Clark County Medical Society.
Dr Robert L. Hamilton, Richmond, Mo, Ray County Medical Society, reelected
Dr John A. Hardison, Lewisburg, Tenn, Marshall County Medical Society
Dr Thaddeus I Hawkins, Griffin, Ga, Spalding County Medical Society
Dr Earl L Hendricks Lanark, Ill, Carroll County Medical Society.
Dr John W Johnson, Hayti, Mo, Pemiscot County Medical Society.
Dr Samuel L. Keller, Waukegan, Ill, Lake County Medical Society.
Dr Arthur H Langhoff, Glencoe, Minn, McLeod County Medical Society
Dr William R Martin, Charlotte C H, Va, Charlotte County Medical Society
Dr Charles A Miller, Princeton, Ind, Gibson County Medical Society.
Dr Albert O Meredith, Hartwell, Ga, Hart County Medical Society
Dr William H Murphy, Redwood City, Calif, San Mateo County Medical Society
Dr Henry A. Nesbitt, Clarksville, Tenn, Montgomery County Medical Society
Dr James B O'Bannon, Mount Carmel, Ky, Fleming County Medical Society
Dr William W Odom, Lyons, Ga, Toombs County Medical Society.
Dr Lyman S Osborne, Fitzgerald, Ga, Ben Hill County Medical Society
Dr John G Potter, Houlton, Me, Aroostook County Medical Society.
Dr Joseph Preucel, Colfax, Wash, Whitman County Medical Society.
Dr John A Rhodes, Crawfordville, Ga, Taliaferro County Medical Society
Dr Mary S Ross, Hannibal, Mo, Marion County Medical Society
Dr Benjamin T Smith, Carnesville, Ga, Franklin County Medical Society
Dr Oliver T Sproull, West Union, Ohio, Adams County Medical Society
Dr Philip E. Stangl, St Cloud, Minn, Stearns Benton County Medical Society
Dr Samuel A Swayne, Melba, Idaho, Canyon County Medical Society.
Dr John G Thoner, Wheeling, W Va, Ohio County Medical Society
Dr Ralph R Trueblood, Lawrenceville, Ill, Lawrence County Medical Society

Government Exposes "Remedy" for Infectious Abortion—In a trial at Cleveland, May 5, the U S Department of Agriculture exposed the absurdity of a remedy sold by the Frick Bowman Remedy Company of Owatonna, Minn, for infectious abortion in cattle It was shown that by repeated analyses the remedy was found to consist almost entirely of brown sugar and ground wheat bran About 9 pounds of the remedy sold on the market for $5 The court held that the company misbranded its product, and ordered the quantity before the court destroyed; previously, the department of agriculture had seized interstate shipments at various points throughout the country, and had notified the Bowman Company that its product was considered misbranded. Erick Bowman, a farmer in Minnesota, in 1921, asked the department of agriculture to buy his secret formula, and, failing to make the sale, he began manufacturing and selling the mixture to farmers; by 1923, a company had been organized and incorporated, and then an extensive campaign was inaugurated to sell "Bowman's Abortion Remedy." It is said that millions of dollars have been mulcted from farmers by dealers in fake cures for this disease, a greater loss, however, is due to the false security which these "cures" engender among farmers, and thus delay the application of proper methods of sanitation among infected herds before farmers realize that they have been duped The consensus of authorities on diseases of animals at this trial was that there is no drug known to be of any value whatever in the prevention and cure of contagious abortion in cattle.

FOREIGN

The Laënnec Centennial.—The Académie de médecine at Paris is planning to celebrate the centennial of the death of Laënnec, the father of auscultation, Dec. 13-15, 1926. A new edition of his Traité d'auscultation is to be issued, and additional ceremonies are planned at his former home in Bretagne. M. P Masson, 120 boul Saint-Germain, Paris, is the treasurer of the fund being collected for the purpose.

Monument to Physicians.—A monument has been dedicated in Germany at Eisenach in Thuringia in honor of physicians who lost their lives during the World War. The sculptor Prof. Hugo Lederer of Berlin represented Aesculapius, there are also two reliefs illustrating medical aid to wounded soldiers, and two tablets with inscriptions. Eisenach is an old German town in which is the famous statue of Martin Luther by Donndorf.

The Cancer Review.—The first number of the *Cancer Review, A Journal of Abstracts,* published by the British Empire Cancer Campaign, has been received The name of Sir William Leishman, who died, June 2, 1926, appears as chairman of the management committee, and Dr. Francis Cavers is general editor. Material is grouped under five heads general; experimental and biochemical; clinical and pathologic; radiologic, and statistical Little if any apology, write the editors, is required to justify the appearance of a new journal of abstracts in this field. Articles written by trained observers in various departments of medicine, biology, physics and chemistry are constantly appearing and are widely scattered through scientific printed matter. Such material will be rendered much more available by the publication of this new periodical. Its value will be enhanced if authors, editors and publishers will send copies of all their relevant publications to Capt. E. J. C. Chapman, M. C, Secretary, 19 Berkeley Street, London, W. 1. The American agent is William Wood & Co

Report of Committee on Rheumatism.—The committee appointed by the council of the British Medical Association, January, 1924, "to inquire into the steps which have been and are being taken in relation to the prevention, detection and treatment of cardiac disease in children, and to make proposals in connection therewith," has just submitted its report Among the most important lines of inquiry considered were the value of tonsillectomy as a means of limiting the injuries inflicted by rheumatic infection, and the present position of after-care of rheumatic children The report signed on behalf of the subcommittee by Sir Humphry Rolleston acknowledges assistance in collecting material from a number of physicians and associations, and makes the following recommendations:

1 Stricter attention to the prevention of damp in dwelling houses
2 Further investigation of housing conditions and of the geographic distribution of the disease
3 Pooling of material for investigation of the bacteriologic aspects of rheumatic infection in childhood
4 Careful and discriminating use of the operation of tonsillectomy.
5 Rapid expansion of the accommodation available for prolonged institutional care of rheumatic children

Deaths in Other Countries

Dr Oscar Bloch, emeritus professor of surgery at the University of Copenhagen, one of the editors of the *Hospitalstidende* and one of the founders of the *Nordiskt medicinskt Arkiv*, aged 79——Dr. A. Van Beneden, founder of the Borgoumont public Sanatorium, the first in Belgium, preceding any in France——William Henry Clayton Greene, formerly dean of the Medical College of St Mary's Hospital, London, England, June 29.——John Thomson, consultant to the Royal Hospital for Sick Children, Edinburgh, author of "Clinical Study and Treatment of Sick Children" and many other contributions to the literature of pediatrics, July 2——Dr. Karl Oppenheimer at Munich, aged 62

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 17, 1926.

The Care of Cripples

Sir Robert Jones, emeritus president of the British Orthopaedic Association, gave an address in London on "The Cripple Problem" under the egis of the Essex County Council. He said that the problem of the cripple was a big one. There were 100,000 cripples in the country at the moment, and a large proportion of them were even now becoming steadily worse, for whom big things had to be done, because little things were not done at an early stage. The majority could be made industrial assets by treatment. He asked where cripples come from, and gave four or five big groups which supplied the majority not caused by war: tuberculosis; rickets — a preventable disease; the paralytic group, due directly to infection; congenital defects, such as clubfoot; the industrial group, due to accidents. Concerning the prevention of tuberculous cripples, he said a great deal had been done in the North and there ought to be some means of making it a national scheme and not a local one. Tuberculosis affecting bones, glands and joints was due to infection from bacilli, either bovine or human. Tuberculosis was not hereditary. Congenital tuberculosis was so rare that it was of no account. Sixty out of a hundred cases of bone and joint tuberculosis were due to infection by the bovine bacillus. As to the human bacillus, there should be some means of preventing children from coming in contact with tuberculous people in the active stages of the disease. Patients were sent home from sanatoriums to die, which was a very dangerous thing, and in a room occupied by a tuberculous person the carpet was infected and children playing in the room would become infected. Rickets was absolutely under control and could be prevented by proper diet, sunlight and fresh air. Deformities were common because of want of early treatment and after-care, and whatever scheme was taken up by a county they should fulfil their obligations in the matter of after-care. The hunchback might have escaped his deformity, had it been discovered in infancy and had he been put to lie down and rest in proper surroundings; the clubfoot, if molded into shape when discovered, could have been put right, but left for three or four years was all but incurable. In any scheme adopted, open-air treatment should form a part. The plight of the adult cripple was sad, and in any scheme he urged them to have beds for adults as well as for children. He also urged them not to be too strict about the age when a child ceased to be a child, and to try to keep the young adult cripple so that he might be perfectly recovered when he went out. Dealing with the cost of building a suitable hospital, he said it would not be so very expensive. They would want a hospital of 300 beds with their population of nearly 1,000,000. In regard to after-care clinics, the cost of looking after children in them was about $20 a year, as compared with $650 a year in a hospital.

The White Man in Tropical Australia

The possibility of the permanent occupation of tropical Australia by a healthy, indigenous white race is still a question. More than a third of the commonwealth lies within the tropics, apart from Papua and the mandated territory of New Guinea. A subcommittee was appointed by the Australasian medical congress of 1911 to consider this possibility and the conditions conducive or essential to such occupation. A report was presented by the subcommittee to the congress held at Brisbane in 1920. The members of the subcommittee were "unable to find anything pointing to the existence of inherent or insuperable obstacles in the way of the permanent occupation of tropical Australia by a healthy indigenous white race." They considered that the question was one of applied public health "in the modern sense," and they pointed out that the absence of semicivilized colored peoples from northern Australia simplified the problem considerably. They maintained that organization, staff, time and money were necessary for the formulation and carrying out of any scheme of extensive settlement. The report of the subcommittee was adopted by the congress. At the Sydney session of the pan-Pacific congress in 1923, several important contributions were made in regard to climate and its effect on human efficiency and its relation to tropical settlement. Prof. Griffith Taylor regarded as most suited to a white man the climate that attracted him to close settlement. He pointed out that the wet-bulb thermometer was the best single instrument for indicating the habitability of any region as regards climate. He concluded that a large proportion of white people would not live in localities of great discomfort until the point of saturation had been reached in more attractive regions. Professor Priestly pointed out that no striking observations had been made of alterations in the physiology of persons in the tropics which could be considered the result of climatic influence. At the same time he laid great stress on "the unhappy lot of women folk" in northern Queensland. He referred particularly to the conditions under which they had to work in carrying out household and kitchen duties. He regarded the possibility of settling northern Queensland with a permanent white population as not proven.

The settlement of the white man in the tropics is the subject of a recent important communication by Dr. R. W. Cilento to the commonwealth government. It is a survey of facts and figures affecting the residence of white people in the tropics with observations on house conditions in certain areas. Dr. Cilento contends that life in tropical Australia offers two distinct problems. This area is unique in having "no large native population teeming with disease." It is occupied by thousands of pure-blooded European settlers. Along the eastern coast of Queensland alone these number 103,000. Some of these settlers are of the second and third generation and make up the largest mass of a purely white population settled in any part of the tropical world. They are really carrying out a huge and unconscious experiment in acclimatization. The white man here is not the lord of a native race. He is simply a working man, carrying out every occupation from the most laborious physical to the higher mental. But in the tropical dependencies of Australia (Papua and the mandated territory of New Guinea) the white man is, as everywhere else in the tropical world "a more or less exotic bloom." He is the controller and overseer of labor, he is the administrative official, and he represents an almost negligible superstratum on the great mass of native life. One of the most difficult features of tropical residence is the tendency of the white man to regard this as of only a temporary nature. In northern Queensland this tendency is gradually becoming less, because the main mass of the population is Queensland born.

Dr. Cilento quotes Professor Skertchly. According to Skertchly, the Australian tropical region enjoys a far more favorable climate than much of the extratropical land, and both as regards temperature and rainfall is superior to regions in the same latitude in South America and South Africa. The greater part of tropical Australia, the great western plateau, lies more than a thousand feet above sea level. A moist tropical climate is the result of heavy rainfall with low elevation. Skertchly regards as unsuitable the area that has an annual rainfall of 50 inches and over. This area extends along the north of Queensland and as far south as the fifteenth degree of latitude. Dr. Cilento points out that this area alone carries a population of many thousands, the overwhelming majority of whom are settled in the hottest and most humid areas. In regard to the effects of residence in the tropics, Dr. Cilento asks what physiologic changes, if any, occur in white races. It has been found by Young that while the body is at rest its temperature does not vary appreciably from that which characterizes it in temperate zones. The temperature rises more quickly after exercise in tropical zones, and subsequently decreases at a slower rate. This is more evident in the newcomer who is not yet acclimatized. In regard to skin color, a black skin is of advantage in that by absorption of heat the body is raised more readily to the sweating point and so to the relief that is experienced at that stage. Of far more importance to the comfort of the person than the actual degree of external temperature or even of humidity is the degree of heat *stagnation*. With high external temperatures the heat lost by sweat evaporation is the most important factor regulating body temperatures, and this heat loss is proportionate to the amount of air movement. The discomfort experienced by Europeans in the tropics is largely a matter of clothes and house ventilation. Rubner pointed out that there is a layer of stagnant air enclosed between the skin and the clothes. The air layer is charged with heat, with moisture and with the exhalations of the skin and is at all times at a much greater temperature than the external air. For this reason a person wearing close-fitting clothes, whether in the tropics or in a temperate climate, lives always under tropical conditions as far as his clothed body is concerned. The statement is commonly made that life in the tropics leads to an alteration in the blood, and it is not surprising that the lay mind accepts this statement without question. The first thing that strikes a visitor to northern Queensland is the pallor of the women and children. Priestly and Breinl examined the blood of 574 apparently healthy school children in that region ranging from 7 to 15 years of age. The only abnormality discovered was a slight increase in the number of leukocytes. There was no anemia. Dr. Cilento points out that many cases of anemia in the tropics are due to malarial and helminthic infections, and that the common pallor of the healthy tropical resident is due to a tropical ischemia or a heaping up of the surface epithelium, which is of no real significance save as an adaptive protection. Ruddiness in an old tropical resident generally indicates ill health or alcoholism. Dr. Cilento refers to the description by Manson-Bahr of "tropical liver." This begins as a purely physiologic condition, a condition of hyperemia from functional inactivity. When physiologic hyperemia is pushed a step further, congestion and blood stasis result. Climate is obviously only an indirect cause of all this morbidity, and Dr. Cilento points out that faulty habits of living may produce it in any climate.

Dr. Cilento draws two important conclusions: physical exercise is essential for life in the tropics, and preventive medicine must be a foremost factor in every aspect of life and industry. Dr. Cilento discusses the statement frequently made that while women live for short periods in the tropics without suffering permanent harm, yet they cannot bear healthy children and that their fertility is lessened. His investigations disprove this view. He draws attention to the fact that a considerable second generation of tropically born children is rapidly springing up in Queensland. If the northern part of Australia can be kept racially pure and if industries can be made to thrive in every part of the continent, the nation will be the gainer not only in commercial prosperity but also in the type of individual that can be produced. The northern regions are producing a hard and wiry type of man who is capable of great endurance. Dr. Cilento has had great opportunities of observing the North and its people. He has made out a good case for the permanent occupation of the tropics by a white race. But it is evident that life in a humid atmosphere is uncomfortable when compared with life in other places. The North must be made more habitable and attractive. Dr. Cilento concludes that the question of the peopling of the tropics by a white race is largely one of preventive medicine. Malaria, helminthiasis and other diseases are found in the Australian tropics. They can be dealt with and eventually controlled. The general principles of preventive medicine must also be applied.

A New Reason for Preferring Medical Women Officers

On the ground that there are more women and children to be attended to than males, Hastings guardians have appointed a woman medical officer. There was some criticism of the proposal, as it was thought that there would be too many patients for a woman. She would also have to travel in the winter to outlying places and perform operations.

NETHERLANDS

(From Our Regular Correspondent)

July 11, 1926.

Work Colonies for the Tuberculous

The Netherlands society "Zonnestraal" (sunbeam) established recently at Hilversum the first work colony on a rural tract. The society has been given a free lease of this property by the association of diamond cutters.

The Purification of Residual Waters

A Netherlands institute for the purification of residual waters has been experimenting with the waste waters from the cardboard factories at Groningen. Each week, 116,400 cubic meters of residual waters was diverted into the canals in the vicinity of Groningen. A septic ditch was constructed, with eight gas reservoirs, into which part of the residual waters from the factory was allowed to flow. A complete laboratory was established in connection with each of the septic ditches. Fuel for the laboratory apparatus and for the building itself was assured by gas collected in the septic ditches. The results were very satisfactory and another station in a similar industry was established, which not only made it possible to get rid of the waste waters but also supplied a quantity of gas sufficient to drive a 140 horsepower motor, heat the boilers of the factory, and still leave an excess, which is contracted for by the gas works of the locality. Several different stations based on other principles have been established. In paper mills a mechanical procedure consisting of decantation and filtration over a bed of slag has been employed. In dye-works the method used is decantation, together with the application of lime water, ferrous sulphate and aluminum sulphate. The residual waters of dairies and abattoirs are treated by a biologic process, together with the addition of lime, which accelerates considerably the natural saponification of fatty bodies and the disintegration of albuminoid substances.

A Medical Directory

The Hofstad printing establishment has published a list of all medical and therapeutic establishments in the Netherlands, together with a statement of the specialties to which they are devoted.

Dental Mechanics

For some time, there has been a controversy between graduate medical dentists and dental mechanics who have claimed the privilege of practicing dentistry in all its forms. An act passed in 1925 allowed those technicians who had taken up dental work before 1913 to practice all forms of dentistry.

However, licenses have been issued to persons who in 1913 were scarcely 15 years old. Furthermore, some persons so licensed had been waiters in restaurants.

Resignation of Professor Kouwer

Professor Kouwer has resigned from his position as professor of gynecology in the University of Utrecht.

Protection Against Roentgen Rays

A committee of the Council of Hygiene has proposed regulations regarding protection against roentgen rays, not only of technicians but also of persons in the vicinity. The committee recommends governmental authorization for the establishment of a roentgenologic laboratory or for the modification of an existing laboratory. Furthermore, the medical use of roentgen rays should be permitted only to registered physicians. Roentgen rays should not be used otherwise except for certain scientific and technical purposes. Authorization for installation should be given only after an investigation as to the need of it. The committee took up also specialization in roentgenology. A special license for roentgenologists is advocated. The report deals, in several chapters, with the relative value of various methods of protection against roentgen rays. The committee approves the establishment of a standard erythema dose.

The Abuse of Tobacco

In the *Katholiek Sociaal Weekblad,* Van Nispen gives statistics on the use of tobacco in the Netherlands. During 1924, 2,500,000,000 cigarets, representing a cost of 43,000,000 florins, or approximately $17,000,000, were consumed. The use of tobacco by children has grown to an alarming extent. An inquiry has been made and the results are deserving of attention: Of 100 boys of 6 years of age, it was found that thirty smoke. Between the ages of 9 and 10, 50 per cent smoke. Of 250 boys more than 11 years old, 220 were smokers.

Mosquitoes of the Surinam Region

The colonial institute of Amsterdam has published a work by Bonne C. and Bonne J. Webster, members of the colonial institute of Amsterdam, which gives the complete fauna of the mosquitoes of the Surinam region and a study on "neotropical mosquitoes."

JAPAN

(From Our Regular Correspondent)

July 4, 1926.

Revised Factory Law

The revised factory law, which was put into force, July 1, protects minors and mothers mainly in accordance with the agreements made at the international labor conference held at Washington in 1919. According to the new regulations, minor employees must be more than 15 years of age, while their working hours are shortened by an hour to two hours a day. Mothers are allowed four weeks before and six weeks after childbirth. Four more weeks' rest may be obtained on a physician's order. They are allowed to nurse their babies for thirty minutes twice a day.

Confectionery and Nutrition

The Japan Children Society has addressed Dr. Toda, director of the Tokyo health bureau, asking that an investigation be made of the nutritive qualities of confectionery.

Workers' Diseases

In the prefectural factory inspectors' conference held under the auspices of the home department in Tokyo last month, it was decided to investigate diseases of factory workers. Prefectural authorities will be asked for records of all workers who were discharged on account of illness during the past three years. One object of this is to investigate the health conditions of the discharged and their families.

Plateau Sanatorium

The first plateau sanatorium in this country has been established by Baron Mitsui and other rich men at Fujimi in Nagano prefecture, 1,100 meters above sea level. Dr. Masaki and some other professors of the medical college of the Keio University have been commissioned to superintend affairs there. The establishment is so promising that they are intending to add a few hundred more beds. Hotels, houses to let, and shops near the institution will constitute a plateau city on the site of this out of the way village.

Model Village and Healthy Quarters

The authorities have planned to establish next year a model sanitary village after the fashion of America. Also they will remedy unhealthy quarters in Tokyo and other large cities, for which the government will allow the cities half the expenses of the program for ten years.

Local Stadiums

The authorities in charge of physical culture have advised prefectural governors that public stadiums will be established in their prefectures. Also, the authorities will assist the governors in giving courses of lectures on athletics, showing films about sports and games, and coaching local athletic sports. Athletes may enter the annual athletic meeting of the Meiji shrine.

Cases of Infectious Disease

The cases of infectious disease in this country for the period from March 28 to May 22 were as follows: typhoid, 3,312; diphtheria, 2,196; dysentery, 762; smallpox, 616; scarlet fever, 384; paratyphoid, 279; meningitis, 62; typhus, 30.

French Physician's Monument

About eighty years ago, when this country was still closed to foreign trade, a Western sailing ship cast anchor in the harbor of Naha, one of the Liu Chiu islands. The ship soon cleared from the port, leaving a Westerner with his dog on the beach. The officials of the island confined him in the Gokokuji Buddhist temple in the town. When after nine years he was set free, he devoted himself to the cure of the sick, and to the propagation of Christianity. He also lectured on the outlines of Western medicine to the herb doctors in the neighborhood, and taught them vaccination. Monsieur Bertheim was the name of this French missionary and physician. This year a monument to his memory was unveiled in the compound of the Gokukuji temple.

Sanitary Exhibition

The Sanitary Association will hold a sanitary exhibition in Osaka, July 15 to August 31. A special feature of the exhibition will be a military ambulance airplane from the Tokorozawa aerodrome. Another unusual exhibit will be a revolving stage showing three scenes all concerning poison gases: (*a*) an orchard and certain industries utilizing gases in peace times; (*b*) a tragic battlefield scene including a display of safety devices against gas, and (*c*) a part of a building devoted to antipoison gas measures, including medical equipment for the cure of poison gas injuries.

Army Venereal Disease Prophylaxis Work

Since cases of venereal disease in the army are increasing, the military medical bureau has come to the conclusion that soldiers should be furnished with prophylactic medicines when they go out of barracks on holidays. It is recommended also that regiments improve the soldiers' recreation facilities that they may be kept away from prostitutes.

VIENNA

(From Our Regular Correspondent)

July 7, 1926.

The Medicolegal Aspects of Blood Comparison

In the Medicolegal Institute, Prof. Dr. Sperl discussed recently the problem of blood comparison. The discovery of the four human blood groups is beginning to be recognized in the law courts. In the case reports of all Austrian hospitals, the blood group to which each patient belongs must be recorded. In questions of paternity, the blood test may be accepted only as indicatory evidence. The blood test is much more important for the diagnosis of blood stains. When blood stains are found on clothing in connection with a supposed crime, the defendant usually attributes them to slight injuries, to nosebleed or to domestic animals. In such cases the blood test will often determine whether the blood stain in question was caused by the defendant's own blood. To be sure, the blood group sometimes cannot be determined because the blood stain has been damaged by subsequent happenings. The establishment of the blood group should be made only by competent experts. Many cases have been reopened lately because persons who, many years ago, were adjudged fathers of certain children and have been compelled to contribute to their support, although they denied they were the fathers, could now point to the fact that at the time of their trial this new diagnostic method was not known.

Treatment of Overweight

In lectures of a graduate course, Professor Schlesinger and Dr. Pollak recently discussed modern methods of reducing fatness. In many cases the obesity is due only in part to fat deposits, and in great part to excessive water content of the tissues, even though edema is not present. There is usually a decreased urine output with lessened sodium chloride excretion. The first thing to do in such cases is to reduce the water content of the tissues. Thyroid administration, carefully controlled, often has good effect (Professor Eppinger's method). Reduction of the fluid intake and a diet poor in salt are indicated; also merbaphen as a so-called tissue diuretic is satisfactory; digitalis and theobromine are not effective. "Tissue diuretics," however, may have a toxic effect. A modified protein-fat diet with restricted carbohydrate and fat will often prove efficacious, the quantity of protein being relatively large. This stimulates also the endocrine glands, which often are functioning deficiently. Changes in the diet and the introduction of vegetable days and milk days are advantageous. An increasing amount of muscular work or physical exercise should be prescribed. With the exception of thyroid preparations, organotherapy has not been found effective. The value of the water-drinking treatment (Carlsbad, Marienbad) lies chiefly in the diet observed during its course, the improvement in intestinal activity and the increased urine output. Then, again, patients who drink a great deal of water are satisfied with less food. Ingestion of "roughage" (cellulose) satisfies hunger without providing much nutriment.

The Iodine Content of Thyroid Preparations

Complaints have arisen in regard to the unreliable character of thyroid preparations. Thyroxin, a triply iodized and triply hydrated derivative of indol, is regarded as the active principle of the thyroid gland. Some have considered the iodine content as of secondary importance, but in recent years the thyroid activity has been regarded as due in great measure to the iodine content. Dr. Liebesny has ascertained the iodine content of sixteen different thyroid preparations from nine different pharmaceutic houses. He found this quantity to range from zero to 0.384 mg. per tablet. He discovered that the tablets in a given lot varied greatly. A 0.1 Gm. tablet contained more iodine than the 0.3 Gm. tablet offered by the same firm, and the 0.5 Gm. tablet did not contain five times as much iodine as the 0.1 Gm. tablet but only from 1.2 to 1.6 times as much. No definite relationship can be established between a given quantity of fresh thyroid gland and the quantity of iodine present. This fact will be understood, since the researches of Fenger and Seidel show that the iodine content of the glands of cattle, pigs and sheep vary with the seasons. Since the physician must know what amount of iodine he is administering to the patient, a standard tablet is needed. Dr. Lenk has succeeded in producing thyroid tablets with a constant iodine content (0.2 mg). Trials with such tablets, the iodine content of which has been accurately determined, have been made in Vienna during the past two years, and have showed that the desired results may be accomplished.

BERLIN

(From Our Regular Correspondent)

July 10, 1926.

The Fiftieth Anniversary of the Federal Public Health Service

June 30, the Reichsgesundheitsamt, or federal public health bureau, celebrated its fiftieth anniversary. It was for a long time the only federal board in the field of public health service. As recently as 1918, a special subdepartment of public health was created within the federal ministry of the interior, under the directorship of a former representative of the Reichsgesundheitsamt. Germany has no federal ministry of public health, in accordance with the historical development of the German reich. The German reich is a federation composed of several states, each of which has its own government. Before the revolution, every state had its own ruling monarch. Since the revolution, every state has been administered by a group that has its center in the parliament. The enactment of laws and their execution rest with the officials of the individual states. Consequently a federal board with executive rights could not be created. The Reichsgesundheitsamt, or, as it was called before the revolution, the Kaiserliches Gesundheitsamt, had, and still has, only an advisory character. It is under the immediate control of the chancellor of the reich. When it was founded, a medical man was placed at the head of it; namely, Bismarck's physician. He was succeeded in a few years by a jurist, and his successor was also a jurist, Bumm (the brother of the Berlin gynecologist of that name, now deceased). Bumm directed the Reichsgesundheitsamt for more than twenty years, until he reached the age limit (65 years). Since his resignation, June 30, another medical man, in compliance with the wishes of the medical profession, heads the bureau. Dr. Hamel, the present occupant of the office, had been, since 1918, the medical representative in the subdepartment for public health service associated with the federal ministry of the interior. He had been also a member of the Reichsgesundheitsamt, and has contributed valuable articles on the public health service, especially in the crusade against tuberculosis.

The importance of the Reichsgesundheitsamt is illustrated by the fact that, only a few years after its creation, Robert Koch was appointed an investigator in the bureau. After a short time, he found the tubercle bacillus, and through him and his collaborators Löffler and Gaffky the bacilli of cholera, diphtheria, typhoid and glanders were discovered. The researches of Koch on disinfection and wound treatment also are deserving of mention. Of similar importance was the discovery of the spirochete of syphilis by Schaudinn during his researches in the Reichsgesundheitsamt. In addition, the Reichsgesundheitsamt promoted public health in Germany to a wide extent. Not a single law in this field was passed without the cooperation and the preliminary investigations of this bureau.

The Reichsgesundheitsamt had originally three laboratories: a chemical, hygienic and bacteriologic laboratory; a toxicologic-pharmacologic laboratory, and a physicochemical laboratory. The last two mentioned are grouped together under the name of the department of natural sciences. In recent years an industrial-hygienic laboratory has been added. There is also a department for studies in the field of general plant culture, with botanic, zoological and bacteriologic laboratories, and a laboratory of agricultural chemistry, for which an experiment station has been established in a suburb of Berlin. About twenty years ago, this department was placed under an independent federal board and given the name of Biologische Anstalt für Land- und Forstwirtschaft.

On the occasion of the fiftieth anniversary of the Reichsgesundheitsamt, the ministry of the interior established a fund of 100,000 marks for the scientific aid of members of the bureau. Furthermore, certain agricultural leagues whose aim and work are closely associated with those of the Gesundheitsamt created a fund of 28,000 marks in recognition of the services of the former director Bumm, who is to have control of the fund. This money may be used for either the scientific or the economic aid of members of the Reichsgesundheitsamt.

Public Marriage Consultation Center

In June, a public marriage consultation center was opened by the municipal administration in the first district of Berlin. Candidates for marriage are advised as to their adaptability from the standpoint of health, while married persons may consult the staff with regard to their adaptability as parents from the standpoint of heredity. Advice is given also in difficulties of a sexual nature, as well as in matters pertaining to the propagation of the race. Treatment is not given. If desired, candidates for marriage are issued health certificates. The personnel of the marriage consultation center is under oath not to divulge information pertaining to persons who come for consultation. No charge is made for consultation, examination or certificates.

Marriages

William Henry Sebrell, Jr., New Orleans, to Miss Margaret Shirley Bruffey of Charlottesville, Va., June 19.

Andrew Stephens Graham, Columbia, S. C., to Miss Nancy Hart Gordon of University, Va., June 26.

Douglas Vander Hoof to Mrs. Nancy Selden Habliston, both of Richmond, Va., at New York, June 22.

Paul P. Youngberg, Cambridge, Mass., to Miss Mable Eleanor Arnell of Rock Island, Ill., June 30.

William Irvine Owens, Pulaski, Va., to Miss Gertrude Emberson of New Rochelle, N. Y., June 22.

Gilmer Gustave Holland, Holland, Va., to Miss Grace Hannah Bailey of Farmville, June 25.

Richard Alfred Bowen, II, to Miss Elmira Peace Ruffin, both of Richmond, Va., June 23.

William David Haggard to Miss Lucile Polk Holman, both of Nashville, Tenn., July 27.

Bernard W. Leonard, Richmond, Va., to Miss Ruth Dyer of Portland, Maine, in June.

Merle Q. Howard, Wauwatosa, Wis., to Miss Anita Clark of Berkeley, Calif., July 17.

George Ozen Martin, Cullen, Va., to Miss Mary Elizabeth Ballou of Richmond, June 7.

Clyde J. Smiles to Miss Esther Peterson, both of Ashland, Wis., at Madison, June 1.

Charles Louis Rudasill, Richmond, Va., to Miss Aline Beville of Crewe, June 30.

George J. C. Larson to Miss Mabel A. Holthousen, both of St. Louis, July 20.

William Chaney to Miss Leila Wade, both of Memphis, Tenn., June 3.

Deaths

Herbert Howard Cushing, Philadelphia; University of Munich, Germany, 1898; Jefferson Medical College of Philadelphia, 1899; member of the Medical Society of the State of Pennsylvania; instructor in zoology, University of Pennsylvania; formerly associate professor of anatomy, Temple University Department of Medicine, Philadelphia; associate professor of anatomy and director of the laboratory of histology and embryology, Woman's Medical College; professor of practical anatomy, Medico-Chirurgical College of Philadelphia, and the University of Pennsylvania School of Medicine; translator from German into English of Bohm, Davidoff and Huber's Text-Book on Histology; aged 54; died, July 3, at the University Hospital, of uremia.

Isaac Wellington Faison, Charlotte, N. C.; Bellevue Hospital Medical College, New York, 1878; member and past president of the Medical Society of North Carolina; formerly professor of pediatrics and clinical medicine, North Carolina Medical College; at one time on the staffs of the Good Samaritan and Presbyterian hospitals; aged 73; died, July 9, of carcinoma of the prostate.

John C. Swindle, Walnut Ridge, Ark; University of Louisville (Ky.) School of Medicine, 1910; member of the Arkansas Medical Society; president and for many years member of the Arkansas State Board of Medical Examiners; served during the World War; aged 44; died, July 10, at the Methodist Hospital, Memphis, Tenn., of pulmonary embolism following a cholecystectomy.

Owen Meredith Knox ⊕ St. Petersburg, Fla.; Illinois Medican College, Chicago, 1907; formerly a practitioner in Chicago; past president of the Pinellas County Medical Society; served during the World War; aged 42; died, July 15, at Chateau Thierry, France, of a skull fracture received in an automobile accident.

Henry Fox Hewes ⊕ Boston; Medical School of Harvard University, Boston, 1895; formerly instructor in theory, practice of physic and medicine at his alma mater; on the staffs of the Massachusetts General Hospital and the Massachusetts Eye and Ear Infirmary; aged 58; died, July 8, of cerebral hemorrhage.

Laurel Elmer Youmans ⊕ Mukwonago, Wis.; Rush Medical College, Chicago, 1890; formerly member of the state legislature; director and at one time president of the Citizens' Bank of Mukwonago; served during the World War; aged 63; died, July 7, at Milwaukee, of carcinoma.

Benjamin Rush Logie, Washington, D. C.; University of Maryland School of Medicine, Baltimore, 1890; member of the Medical Society of the District of Columbia, and the Washington (D. C.) Society for Nervous and Mental Diseases; aged 58; died, April 12, of arteriosclerosis.

James Moore Barton, Atlantic City, N. J.; Jefferson Medical College of Philadelphia, 1868; member of the American Surgical Association; formerly on the staffs of the Charity Hospital and the German Hospital (now the Lankenau Hospital), Philadelphia; aged 80; died, June 28.

Volney McReynolds Schowalter, Fairhope, Ala.; University of Alabama School of Medicine, Tuscaloosa, 1890; member of the Medical Association of Alabama; past president of the Baldwin County Medical Society; formerly county health officer; aged 57; died, June 29.

Fred A. Christenson, Seattle, Wash.; Central College of Physicians and Surgeons, Indianapolis, 1895; member of the Washington State Medical Association; formerly postmaster of Lake Mills, Iowa; aged 59; died, July 3, of cerebral hemorrhage and myocarditis.

Robert Lanning Lounsberry ⊕ Binghamton, N. Y.; Medical Department of the University of the City of New York, 1890; medical director of the Security Mutual Life Insurance Company; aged 57; died, July 8, while on a train at Adams, Wis., of cerebral hemorrhage.

Frederick Abbott Goodwin, Binghamton, N. Y.; University of Vermont College of Medicine, Burlington, 1887; Medical Department of Columbia College, New York, 1888; member of the Medical Society of the State of New York; aged 61; died, April 23.

John E. Lee, Haskell, Okla.; Bellevue Hospital Medical College, New York, 1893; member of the Oklahoma State Medical Association; for many years city health officer;

aged 59; died, May 23, from the effects of carbon monoxide gas poisoning.

Charles Francis Hawley ⊕ Bisbee, Ariz.; Chicago Homeopathic Medical College, 1897; formerly member of the state board of medical examiners; county physician; on the staff of the Copper Queen Hospital, where he died, May 22, aged 55.

Nelson L. North ⊕ Brooklyn; Medical Department of Columbia College, New York, 1886; member of the Brooklyn Ophthalmological Society; formerly on the staff of the Brooklyn Eye and Ear Hospital; aged 61; died, July 13.

Thomas Francis Carroll, Lowell, Mass.; Medical School of Harvard University, Boston, 1888; member of the Massachusetts Medical Society; for nine years member of the board of health; aged 62; died, July 10, of heart disease.

William Leachman Lemon, Cleveland; Ohio Medical University, Columbus, 1897; member of the Ohio State Medical Association; also a minister; aged 62; died, July 9, at the Woman's Hospital, following a cholecystectomy.

Luther Ebert Mitchell, Edgerton, Wyo.; University of Colorado School of Medicine, Denver, 1912; member of the Wyoming State Medical Society; served during the World War; aged 39; died, in June, of pneumonia.

Edgar Chetwyn Beaumont, San Saba, Texas; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1905; member of the State Medical Association of Texas; aged 42; died, April 16, of uremia.

William Lindsay Medling ⊕ Dyer, Tenn.; Vanderbilt University School of Medicine, Nashville, 1904; aged 48; died, July 6, at the Baptist Memorial Hospital, Memphis, following an operation for removal of the spleen.

Harry Clay Stinson, Dermott, Ark.; University of Louisville School of Medicine, 1881; formerly superintendent of the State Hospital for Nervous Diseases, Little Rock; aged 72; died, June 15, of heart disease.

Oliver C. Hefner ⊕ Pottstown, Pa.; Jefferson Medical College of Philadelphia, 1885; past president of the Montgomery County Medical Society; on the staff of the Pottstown Hospital; aged 70; died, June 14.

Lemuel J. Sharp, Commerce, Ga.; Medical College of Ohio, Cincinnati, 1883; member of the Medical Association of Georgia; aged 64; died, July 6, at a hospital in Baltimore, of carcinoma of the pancreas.

George Newton Best, Rosemont, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1875; member of the Medical Society of New Jersey; also a botanist; aged 80; died, June 18, of myocarditis.

Readding Lloyd Williams ⊕ Norfolk, Va.; Medical Department of the Tulane University of Louisiana, New Orleans, 1898; served during the World War; aged 59; died, June 22, of cerebral hemorrhage.

Isaiah P. Gunby, Seattle, Wash.; Medical Department of the Tulane University of Louisiana, New Orleans, 1884; member of the Washington State Medical Association; aged 62; died, in June.

George Baptiste Witt ⊕ Newark, N. J.; University and Bellevue Hospital Medical College, 1908; on the staff of St. James' Hospital, where he died, July 10, of intestinal obstruction, aged 43.

Alison Cumming, Vancouver, B. C.; McGill University Faculty of Medicine, Montreal, Que., 1905; on the staff of the Vancouver General Hospital; aged 47; died, June 5, of pernicious anemia.

Joseph E. MacKenzie, Amsterdam, N. Y.; New York Homeopathic Medical College and Hospital, 1892; aged 63; died, March 29, at Rochester, of arteriosclerosis and myocarditis.

Leonard E. Ladd, Van Wert, Ohio; College of Physicians and Surgeons, Baltimore, 1881; member of the Ohio State Medical Association; aged 68; died, July 8, of angina pectoris.

Frank Eaton, East Weare, N. H.; Dartmouth Medical School, Hanover, 1877; member of the New Hampshire Medical Society; aged 75; died, May 22, at Ossipie, of heart disease.

Samuel McCallum, Thornbury, Ont., Canada; University of Toronto Faculty of Medicine, 1899; coroner of the Thornbury District; member of the school board; aged 53; died, May 1.

Samuel Whelpley Gibbs, Fall River, Mass.; Dartmouth Medical School, Hanover, 1890; aged 71; died, April 25, of chronic myocarditis and chronic interstitial nephritis.

William Henry Jenkins, Denver; Medico-Chirurgical College of Kansas City, Mo., 1900; aged 52; died, June 19, at St. Anthony's Hospital, of acute nephritis and uremia.

Edwin Zimmerman, New York; University of Maryland School of Medicine, Baltimore, 1879; aged 68; died, July 9, following an operation for carcinoma of the throat.

William A. Germain, Sioux Falls, S. D.; Medical College of Indiana, Indianapolis, 1882; past president of state board of health; aged 71; died, July 5, of heart disease.

Beauford Edmond Avritt, Bradfordsville, Ky.; University of Louisville School of Medicine, 1873; aged 87; died, July 8, at the Elizabeth's Hospital, Lebanon, of senility.

James Calvin Harris ⊕ Reidsville, Ga.; Atlanta School of Medicine, 1909; president of the Tattnall-Evans County Medical Society; aged 58; died, June 26, at Atlanta.

Basil Ernest Swiger, New Martinsville, W. Va.; Baltimore Medical College, 1905; aged 47; died, May 23, at the Wetzel County Hospital, of interstitial nephritis.

Richard Cloward Casselberry, Chester, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1903; aged 49; died, recently, following an appendectomy.

Anthony Leo Lutz ⊕ St. Louis; Washington University School of Medicine, St. Louis, 1912; aged 49; died, July 4, at Carthage, of carcinoma of the rectum.

Stephen Stoddard Stone, Ridgely, Md.; University of Maryland School of Medicine, Baltimore, 1894; aged 58; died, May 24, of chronic interstitial nephritis.

Samuel R. Wilson, Rossville, Ill.; University of Louisville School of Medicine, 1881; aged 67; died, July 4, at the Lakeview Hospital, Danville, of uremia.

James A. Barkalow, Rose Hill, Kan.; College of Physicians and Surgeons, Keokuk, 1881; aged 70; died, March 7, at Wichita, of cerebral hemorrhage.

Zenas H. Going, Chicago; Rush Medical College, Chicago, 1874; member of the Illinois State Medical Society; aged 77; died, July 2, of angina pectoris.

Benedict J. Ludwig, St. Louis; Marion-Sims College of Medicine, St. Louis, 1896; aged 60; died, July 8, of cerebral embolism and arteriosclerosis.

John W. Veach, Youngstown, Ohio; Cleveland Medical College, 1892; member of the Ohio State Medical Association; aged 60; died, July 8.

Henry N. Willis, Wilmington, Del.; University of Maryland School of Medicine, Baltimore, 1888; aged 60; died, April 11, of myocarditis.

Horace Vivian Pearman, Halifax, N. S., Canada; McGill University Faculty of Medicine, Montreal, Que., 1888; died, April 23, at Wolfville.

Henry P. Feaster, Delaware, Ohio; Eclectic Medical Institute, Cincinnati, 1890; aged 65; died, June 25, at St. Augustine, Fla., of heart disease.

Floyd Arthur Pingree ⊕ Elgin, Ill.; Hahnemann Medical College and Hospital, Chicago, 1920; aged 31; died, July 3, of acute appendicitis.

George Parsons Bell ⊕ Ulysses, Kan.; Bellevue Hospital Medical College, New York, 1886; aged 67; died, July 8, of cerebral hemorrhage.

Benjamin F. Bond, Vermilion, Ohio; Detroit Homeopathic Medical College, 1873; aged 92; died, June 24, of prostatitis and general debility.

Charles Edward Turner, Bishop, Calif.; Cooper Medical College, San Francisco, 1894; aged 59; died, June 17, following a long illness.

Harold Francis Simon ⊕ Winchester, Mass.; Boston University School of Medicine, 1904; aged 44; died, July 6, of heart disease.

Benjamin Philander Hooker, Russellville, Ky.; University of Nashville Medical Department, 1867; aged 88; died, July 2, of senility.

Isaac Somers Berrey, Batchtown, Ill.; Missouri Medical College, St. Louis, 1882; aged 69; died, July 9, of bulbar paralysis.

Chris T. Grinstead, Glasgow, Ky.; University of Louisville School of Medicine, 1868; aged 84; died, June 20, of angina pectoris.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

SILVER PROTEIN PREPARATIONS

Market Specimens That Have Been Found to Comply With New U. S. Pharmacopeia Standards

[Report of the A. M. A. Chemical Laboratory]

The Council on Pharmacy and Chemistry requested the Chemical Laboratory of the American Medical Association to examine the silver protein preparations that had been found acceptable for inclusion in New and Nonofficial Remedies in order to determine whether or not they complied with the new standards required by the United States Pharmacopeia X. Original samples of each of the following preparations were purchased on the open market:

Argyn (The Abbott Laboratories)
Argyrol (A. C. Barnes Co.)
Cargentos (H. K. Mulford Co.)
Silvol (Parke, Davis & Company)
Solargentum (E. R. Squibb & Sons)
Vargol (Heyden Chemical Company)
Proganol (Heyden Chemical Company)
Protargentum (E. R. Squibb & Sons)
Protargol (Winthrop Chemical Company)

In the tenth edition of the U. S. Pharmacopeia the principal criteria for the control and purity of these substances are silver content and the yeast fermentation inhibition as worked out by Pilcher and Sollmann.[1] The results of the silver determinations are recorded in the following table:

Silver Determinations

STRONG SILVER PROTEIN TYPE

	Content Found	N. N. R. 1925 Claims	U. S. P.
Proganol	8.7	Not less than 8.3 per cent	7.5-8.5
Protargentum	8.6	About 8.3 per cent	7.5-8.5
Protargol	8.4	Not less than 8.3 per cent	7.5-8.5

MILD SILVER PROTEIN TYPE

	Content Found	N. N. R. 1925 Claims	U. S. P. X
Argyn	26.3	25-30 per cent	19-25
Argyrol	19.4	20-25 per cent	19-25
Cargentos	20.2	20-25 per cent	19-25
Silvol	19.9	About 20 per cent	19-25
Solargentum	19.5	19-23 per cent	19.25
Vargol	21.8	Not less than 20 per cent	19-25

YEAST FERMENTATION DETERMINATIONS

All of the preparations passed the yeast fermentation inhibition test as described by the U. S. Pharmacopeia X, except Cargentos and Vargol. Of these Cargentos was only slightly stronger than the limit imposed by the U. S. Pharmacopeia X, and Vargol was eight times too strong.

On writing the Heyden Chemical Company in reference to Vargol, the company replied that it was withdrawing Vargol from the market and supplying a product under the name adopted by the new U. S. Pharmacopeia, viz., "Silver Protein Mild" which answers all of the requirements of the U. S. Pharmacopeia X.

Cargentos was so close to the requirement of the U. S. Pharmacopeia X that the variation was not considered sufficient to exclude the product from the U. S. Pharmacopeia X classification.

The manufacturers of Argyn (The Abbott Laboratories) informed the Council that the variation of silver content of Argyn was being reduced so that the product now complies with the U. S. Pharmacopeia in this respect.

SUMMARY

All of the market specimens of the silver protein preparations both mild (Argyrol type) and strong (Protargol type) described in New and Nonofficial Remedies were examined and were found to comply with the new U. S. Pharmacopeia standards for these preparations.

Correspondence

NONTUBERCULOUS PERIBRONCHITIS

To the Editor:—In reading Dr. Meader's article (The Journal, July 17) on "Nontuberculous Peribronchitis Simulating Occult Tuberculosis," it occurred to me as strange that no reference was made to aspergillosis or other infection by fungi, which certainly must be ruled out in any differential diagnosis in these patients who exhibit a condition such as he describes. None of those participating in the discussion brought up the point. The occurrence of fungus infestation, while rare, is not to be overlooked. Brilliant results follow potassium iodide administration. Sometimes at any rate, the condition is ameliorated.

Thomas I. O'Drain, M.D., Philadelphia.

SURGERY IN HOT WEATHER

To the Editor:—I should like to offer the following hot weather suggestion: In one of the hospitals with which I am connected, the practice of applying an ice bag about the neck of the surgeon in the operating room has been found very practicable during the hot weather months. The ice bag should be covered with gauze or a towel to prevent any water of condensation from dropping into the field of operation. The operator is much more comfortable and perspires much less, and his face and neck require much less "mopping" than under ordinary circumstances.

Samuel Iglauer, M.D., Cincinnati.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EFFECTS OF LEMON JUICE

To the Editor:—1. What is the real effect of lemon juice on the hair, as it is commonly used in the so-called lemon rinse? 2. Is there any soundness in the theory that lemon juice or fruit beverages in which lemon juice is used, such as the common lemonades or lemon punches (nonalcoholic), have a cooling effect? I seem to remember that in a case of erysipelas in our family in the early days cream of tartar was given to "cool the blood." Was this merely a superstition or has it a basis in fact?

A. B., New York.

Answer. 1.—Lemon juice has none of the effects on the hair that are claimed for it in cosmetics. It does not lighten the hair; it does not make the removal of soap or grease easier from the hair; nor does it "cut." It is of no use for dandruff or scalp diseases.

2. Acidulous drinks were formerly classified as "refrigerants," because they made the fever patient feel cooler. They do this just as a similar drink on a hot day refreshes a normal person. That they do not really reduce temperature and "cool the blood" was unknown in the days prior to the use of the clinical thermometer. At present the idea is a relic of bygone days; i. e., a superstition.

LIME INFILTRATIONS OF THE CORNEA

To the Editor:—Is there some solution that will help remove lime infiltrations of the cornea? It seems to me that I saw this in The Journal recently, but I cannot find it.

M.D., Washington.

Answer.—If the patient is seen within a few minutes after the lime has attacked the eye, copious irrigations with ordinary cow's milk have been of value in preventing destructive after-influences of lime burns of the eye. One man reported that intramuscular injections of sodium cacodylate were beneficial in lessening lime infiltrations of the cornea, but this has never been substantiated by others. Part of the lime infiltration of the cornea is due to a deposit of calcium carbonate particles within the corneal stroma, and the more superficial particles may be absorbed by Guillery's method. This consists in anesthetizing the eye and then soaking it for half an hour to one hour daily in a bath consisting of *ammonium chloride, 20 Gm.; tartaric acid,* 0.05 Gm.; distilled water, 100 cc. For the first five days, one part of the wash is used to ten parts of distilled water. Every five days the dilution is decreased by one tenth until the wash is used full strength. In using the wash, an ordinary glass eye cup is half filled with the wash; it is then fitted over the eye while the head is bent forward, and the head is thrown back and the eye opened. Surgical removal of the superficial particles is the only other way of improving the condition.

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[1] See Editorial "Classification of Mercurials," J. A. M. A., July 24, 1926, p. 246.

WASSERMANN TEST ON MENSTRUAL BLOOD

To the Editor:—There are times when it is exceedingly difficult to get a specimen of blood from a woman for a Wassermann test. Can a satisfactory reaction be obtained from a specimen of menstrual blood? (Please omit name.)

M.D., *Connecticut.*

Answer.—There is little evidence in the literature of Wassermann work on menstrual blood. In one case in which it was done, a negative result was obtained. The patient had no clinical evidence of syphilis. However, the serum was very red and mixed with a large amount of mucus, so the material could not be considered useful for giving a reliable result. Glandular secretions are apt to be mixed with the menstrual blood and the specimen is apt to be red from broken down corpuscles, and both factors may introduce error. Kolmer and others have shown that saliva and milk, which are both of glandular origin, give unsatisfactory results because of a high degree of anticomplementary value, and only a small percentage of positives are obtained in markedly syphilitic cases. Fluids, however, of blood origin, as ascitic fluid, blister fluid or pleural fluid, give a satisfactory Wassermann reaction.

The menstrual flow in many women would not be sufficient for securing more satisfactory amounts of blood than could more easily be procured in other ways. It is rarely difficult to get blood from a vein, either an arm vein or from the hand or ankle. In a difficult case it can be easily obtained by puncturing the ear, tip of finger or heel.

PHYSICIANS AS CORONERS

To the Editor:—I have taken this matter up with the local state secretary, and he advised me to write you for as much information as you could give me; there was much he did not know. 1. How many states require the coroner to be a *physician?* 2. What percentage of states make it a practice to use physicians when they can get them? 3. What advantage would it be to the *county* to employ a physician? 4. Can a physician act in postmortem work and charge for his services if he is the coroner? 5. If the coroner is a physician and he decides the cause of death, will it be necessary to have an inquest? Would his opinion be sufficient and overrule the state's attorney?

Harry F. Smith, M.D., Racine, Wis.

Answer.—1. This could be ascertained only by a study of the statutes of the several states, which is impracticable.

2. This information cannot be obtained at all, as it involves a knowledge, not only of the laws of the states, but of the availability of physicians for coronerships, and the practices of the electorates of the various states and counties.

3. See the following:

White, C. S.: The Relation of the Physician to the Coroner's Office, *Washington M. Annals* **14:** 242, 1915.

Wadsworth, W. S.: The Coroner and the Physician, *New York M. J.* **103:** 400 (Feb. 26) 1916.

Spencer, W. G.: Discussion on the Relationship Between Coroners and Medical Men, *Tr. M. Soc.* London **32:** 262, 1909.

Norris, C. C.: The Office of Chief Medical Examiner: Its Relation to the Public, the District Attorney's Office and the Medical Profession, *New York M. J.* **19:** *189, 1919.*

Ashley, C. R.: The Relation of the Physician to the Coroner's Office, *Tr. Luzerne County M. Soc.*, 1919, Wilkes-Barre **21:** 111, 1920.

4. This would depend on the laws of the jurisdiction. Unless expressly authorized by statute, he probably could not. The postmortem examinations contemplated are probably those that would have to be made under the supervision and control of the coroner, and it would be against public policy for a coroner to employ himself, supervise his own work, and approve his own bills.

5. The laws of the jurisdiction determine when an inquest is and is not necessary. Ordinarily the coroner is not subject to the jurisdiction of the state's attorney, but the action by the coroner does not prevent the state's attorney from investigating a case through his own agents or through the grand jury, if he so desires.

AVERAGE AGE OF DEATH OF PHYSICIANS

To the Editor:—I am trying to find the average age at death of professional men. I have asked the census bureau and it has nothing recent. I want it for comparative purposes. I wonder whether you know of any available data. The insurance companies have nothing apparently. I wonder whether it would be possible to get without much trouble the age at death of physicians who have died since 1900, say even the members of the American Medical Association.

James J. Walsh, M.D., New York.

Answer.—In the tabulation that follows are given the average ages of physicians at time of death, as reported in The Journal:

Year	Number of Deaths with Ages Reported	Average Age at Death
1900	650	58.35
1905	1,609	60.34
1910	2,180	60.46
1915	2,269	60.45
1920	2,211	61.09
1925	2,370	62.12

The fraction of years in these averages means nothing, and it is doubtful whether the slight difference in the average of 1905 and that of 1920 means much. The Journal reports ages only in years completed. A man 40 years and 10 months old would appear in The Journal as 40 years old when he died; so would a man 40 years and 2 months old. Their average age in this sort of summary would appear as 40, when actually the average would be 40.5. And so with the total number in a year, the months we do not add might account for the small difference we found.

MEASUREMENT OF ROENTGEN-RAY DOSAGE

To the Editor:—In Queries and Minor Notes (The Journal, July 10), in reply to Dr. McAmis, you give a roentgen ray erythema time of "approximately five minutes" for the factors *7 inch spark gap, 5 milliamperes* and 20 inch target skin distance. I do not know how you have arrived at this time but, according to Witherbee and Remer, for unfiltered *roentgen-ray* dosage

$$\frac{\text{Sp. G.} \times \text{Ma.} \times \text{T}}{\text{Distance squared}} = \frac{45}{64}$$

Taking the factors given, and working out the time, one arrives at an erythema time of about eight minutes. Your ratio between the 10 inch and 20 inch target skin distance is, of course, correct on the law of inverse square, but the 10 inch erythema time should then be one fourth of eight minutes instead of one fourth of five minutes. I note that you do not answer the query with regard to the aluminum filtration and, perhaps, wisely, as there is, so far as I know, no generally accepted formula for calculating filtered dosage.

It should be emphasized, I think, always in giving dosage formulas that the output of tubes and machines varies considerably, especially with unfiltered ray; that meters are often inaccurate and that estimations of point spark gap depend on many things, including altitude, the sharpness of the points and the personal equation of the operator, and are, therefore, notoriously inaccurate.

It would probably be a safer plan for the inexperienced operator to take a minimum dose, known to be suberythema, as a starter, and perform some biologic test with his own apparatus, and then base his treatment routine on the biologic study, which will possibly hold as long as there is no change in transformer, tube or line conditions.

Charles D. Enfield, M.D., Louisville, Ky.

Answer.—Prescriptions for roentgen-ray treatments may be given approximately only, because it is a well known fact that each apparatus constitutes an individual unit.

The figures quoted were arrived at by using the Holzknecht tables, which are recognized as standard information.

THE CUTANEOUS DISORDER OF MARAT

To the Editor:—I have seen it stated in books in which Marat is mentioned that "while in the sewers of Paris he contracted a horrible skin disease, which became progressively worse, and from which he could only find solace when he was in a bath." What was the disease?

Wilfred Greenburg, M.D., New York.

Answer.—We quote the following from "Post Mortem" by C. MacLaurin: "As for his skin disease, modern writers seem to consider that we should nowadays call it 'dermatitis herpetiformis,' though his political friends artlessly thought it was due to the humors generated by excessive patriotism in so small a body attacking his skin, and thus should be counted for a virtue. Carlyle hints that it was syphilis, thus following in the easy track of those who attribute to syphilis those things which they cannot understand. But syphilis, even if painful, would not have been relieved by sitting for hours daily in a hot bath."

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

American Board for Ophthalmic Examinations. Colorado: Denver, Sept. 13. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

American Board of Otolaryngology. Colorado: Denver, Sept. 13. Sec., Dr. H. W. Loeb, 1402 So. Grand Blvd., St. Louis, Mo.

Arizona: Phoenix, Oct. 5. Sec., Dr. W. O. Sweek, Phoenix.

Colorado: Denver, Oct. 5. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Illinois: Chicago, Oct. 5-7. Supt., Regis. and Education, Mr. V. C. Michels, Springfield, Ill.

Minnesota: Minneapolis, Oct. 5-7. Sec., Dr. A. E. Comstock, 636 Lowry Bldg., St. Paul.

Montana: Helena, Oct. 5-7. Sec., Dr. S. A. Cooney, Helena.

New Hampshire: Concord, Sept. 9-10. Sec., Dr. Charles Duncan, Concord.

New York: Albany, Buffalo, New York and Syracuse, Sept. 20-23. Chief, Professional Exams. Bureau, Mr. Herbert J. Hamilton, State Education Building, Albany.

Oklahoma: Oklahoma City, Sept. 14-15. Sec., Dr. J. M. Byrum, Shawnee.

Utah: Salt Lake City, Oct. 5. Director, Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

Wisconsin: Basic Science Board, Madison, Sept. 18. Sec., Dr. M. F. Guyer, University of Wisconsin, Madison.

New York January Examination

Mr. Herbert J. Hamilton, chief of the Professional Examinations Bureau of New York, reports the written examination held at Albany, Buffalo, New York and Syracuse, Jan. 25-28, 1926. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Of the 212 candidates examined, 168, including 3 osteopaths, passed, and 44, including 1 osteopath, failed. Sixty-eight candidates were licensed by endorsement of their credentials from Jan. 1 to April 14, 1926. The following colleges were represented:

College PASSED	Year Grad.	Number Passed
University of Arkansas Medical Department	(1924)	1
Yale University School of Medicine	(1925)	4
University of Colorado School of Med.	(1924) 1, (1925, 2)	3
Georgetown University School of Medicine	(1922), (1925, 3)	4
George Washington Univ. Med. School	(1924), (1925, 2)	3
Howard University School of Medicine	(1924), (1925, 2)	3
University of Georgia Medical Department	(1924)	1
University of Kansas School of Medicine	(1922)	1
Loyola University Medical Department	(1925)	1
Northwestern University Medical School	(1925)	1
Rush Medical College	(1925)	1
University of Illinois College of Phys. and Surgs	(1925)	1
Indiana University School of Medicine	(1925)	1
Tulane University of Louisiana School of Medicine	(1925)	3
Johns Hopkins University Med. Dept.	(1915), (1923), (1925)	3
University of Maryland School of Medicine	(1924), (1925, 4)	5
Boston University School of Medicine	(1925)	1
Harvard University	(1919), (1923, 2), (1925)	4
Tufts College Medical School	(1923), (1924), (1925, 6)	8
University of Michigan Medical School	(1923), (1924)	2
University of Minnesota Medical School	(1921), (1925, 2)	3
St. Louis University School of Medicine	(1925)	1
Washington University School of Medicine	(1923)	1
Creighton University College of Medicine	(1924)	1
University of Nebraska College of Medicine	(1923)	1
Albany Medical College	(1925)	1
University and Bellevue Hosp. Med. College	(1924), (1925, 3)	4
University of Buffalo Department of Medicine	(1925)	1
Columbia Univ. College of Phys. and Surgs.	(1924), (1925, 4)	5
Cornell University Medical College	(1924, 2), (1925, 5)	7
Long Island College Hospital	(1925)	3
Syracuse University College of Medicine	(1925)	1
University of Oklahoma School of Medicine	(1925)	1
Hahnemann Medical Coll. and Hosp. of Philadelphia	(1925)	1
Jefferson Med. College of Philadelphia	(1923), (1924), (1925)	3
Univ. of Pennsylvania School of Med.	(1916), (1924), (1925,2)	4
University of Pittsburgh School of Medicine	(1924)	2
Western Pennsylvania Medical College	(1907)	1
University of Tennessee College of Medicine	(1925)	1
Vanderbilt University School of Med.	(1919), (1922), (1923)	3
Baylor University School of Medicine	(1925)	1
University of Texas School of Med.	(1923), (1924), (1925)	3
University of Vermont College of Med.	(1924, 2), (1925, 4)	6
Medical College of Virginia	(1925)	1
McGill University Faculty of Medicine	(1921), (1923,4), (1924, 2), (1925, 2)	9
Queen's University Faculty of Med.	(1919), (1923), (1924, 4)	6
University of Toronto Faculty of Medicine	(1920), (1922, 2), (1923, 3), (1924, 2), (1925, 3)	11
University of Western Ontario Medical School	(1920), (1921)	2
University of Vienna, Austria	(1923)*	1
University of Berlin, Germany	(1910),* (1919), (1921),* (1922),* (1923)*	5
University of Erlangen, Germany	(1923)*	1
National University of Athens, Greece	(1915)*	1
University of Budapest, Hungary	(1906), (1912), (1912),* (1914),* (1921),* (1922),* (1923)*	7
Comenian University of Bratislava, Czechoslovakia	(1923)*	2
University of Bologna, Italy	(1923)*	1
University of Naples, Italy	(1912),* (1917),* (1920),* (1921, 2)* (1923)*	6
University of Palermo, Italy	(1921)*	1
University of Rome, Italy	(1916)*	1
University of Szegedin, Hungary	(1922)*	1
Donskey University, Rostoff on Don, Russia	(1920)*	1
University of Geneva, Switzerland	(1907)	1
University of Constantinople, Turkey	(1919)*	1
Osteopaths		3

College FAILED	Year Grad.	Number Failed
Howard University School of Medicine	(1925)	1
Baltimore Medical College	(1904)	1
Boston University School of Medicine	(1925)	1
Tufts College Medical School	(1923)	1
University of Michigan Medical School	(1912)	1
University of Buffalo, Medical Department	(1922)	1
Columbia University Coll. of Physicians and Surgeons	(1925)	1
Fordham University School of Medicine	(1917)	1
Long Island College Hospital	(1924)	1
Medico-Chirurgical College of Philadelphia	(1909)	1
Woman's Medical College of Pennsylvania	(1924), (1925)	2
University of Western Ontario Medical School	(1917)	1
University of Vienna, Austria	(1923),* (1925)*	2
Comenian University of Bratislava, Czechoslovakia	(1920)*	1
German University of Prague, Czechoslovakia	(1921)*	1
University of Montpelier, France	(1913)*	1
University of Giessen, Germany	(1923)*	1
University of Munich, Germany	(1925)*	1
National University of Athens, Greece	(1921)*	1
University of Budapest, Hungary	(1921)*	1
University of Szegedin, Hungary	(1914)*	1
University of Catania, Italy	(1922)*	1
University of Naples, Italy	(1916),* (1920),* (1921,* 2), (1923,* 5), (1924)*	10
University of Palermo, Italy	(1921,* 2), (1922),* (1923)*	4
University of Pavia, Italy	(1920)*	1
University of Rome, Italy	(1921)*	1
University of Zurich, Switzerland	(1922)*	1
University of Constantinople, Turkey	(1914)*	1
University of Warsaw, Poland	(1922)*	1
Osteopath		1

College LICENSED BY ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Stanford University School of Medicine	(1917)	California
Yale University School of Medicine	(1917)	Connecticut
Howard University School of Medicine	(1914)	Virginia
Bennett College of Eclectic Medicine and Surgery	(1891)	Illinois
General Medical College, Chicago	(1924)	Wisconsin
Rush Medical College	(1907)	Utah
Indiana University School of Medicine	(1924, 3)	Indiana
University of Louisville School of Medicine	(1912)	W. Virginia
Tulane University of Louisiana School of Medicine	(1914)	Louisiana
Baltimore Medical College.......(1906) Connecticut,	(1907)	New Jersey
Johns Hopkins University Medical Department (1913) Massachusetts, (1917) Maryland	(1903)	Ohio,
University of Maryland School of Medicine (1914) Connecticut, (1916), (1917) Porto Rico	(1910)	Maryland,
Harvard University..............(1915) Maryland,	(1918)	Penna.
Tufts College Medical School..(1917) Massachusetts,	(1920)	Porto Rico
University of Michigan Homeopathic Medical School	(1914)	Michigan
University of Michigan Medical School	(1917)	Michigan
University of Minnesota Medical School	(1921)	Minnesota
University Medical College of Kansas City, Mo	(1905)	Kansas
Washington University School of Medicine (1924) California	(1909)	Missouri,
University of Nebraska College of Medicine	(1912)	S. Dakota
University and Bellevue Hospital Medical College	(1916)	New Jersey
Medical College of Ohio	(1910)	Colorado
Ohio State University College of Medicine	(1924)	Ohio
Western Reserve University School of Medicine	(1924)	Ohio
Hahnemann Med. College and Hospital of Philadelphia ....(1895) Pennsylvania, (1896),	(1910)	New Jersey
Jefferson Medical College of Philadelphia	(1912)	R. Island
University of Pennsylvania School of Medicine (1914) New Jersey	(1906)	Penna.
University of Pittsburgh School of Medicine	(1916)	Penna.
University of Texas Department of Medicine	(1920)	Texas
Medical College of Virginia	(1923), (1924, 2)	Virginia
University of Virginia School of Medicine	(1903)	Virginia
Laval University Faculty of Medicine	(1905)	New Hamp.
University of Vienna, Austria	(1901)*	Roumania
University of Wurzburg, Germany	(1898)*	Wisconsin
University of Budapest, Hungary	(1899)	Ohio
National University of Ireland, Dublin	(1923)*	New Jersey
University of Naples, Italy	(1903)*	New Jersey
University of Central Spain, Madrid	(1922)	Porto Rico

College ENDORSEMENT OF GOVERNMENT CREDENTIALS	Year Grad.	Endorsement with
Northwestern University Medical School	(1925)	N. B. M. Ex.
Johns Hopkins University Medical Dept.	(1922, 2), (1924)	N. B. M. Ex.
Boston University School of Medicine	(1924)	N. B. M. Ex.
Harvard University	(1924)	N. B. M. Ex.
Tufts College Medical School	(1924)	N. B. M. Ex.
Cornell University Medical College	(1924)	N. B. M. Ex.
Syracuse University College of Medicine	(1924)	N. B. M. Ex.
University of Virginia School of Medicine	(1924)	N. B. M. Ex.

College ENDORSEMENT OF DIPLOMA	Year Grad.	Endorsement with
University of Königsberg	(1897)*	Germany
University of Budapest, Hungary	(1912), (1914)*	Budapest
University of Naples, Italy	(1913)*	Naples

* Verification of graduation in process.

Book Notices

INDIGESTION: WHAT IT IS AND HOW TO PREVENT IT. By Arthur L. Holland, M.D., Assistant Professor of Clinical Medicine, Cornell University Medical College. Cloth. Price, $1.25. Pp. 150, with 12 illustrations. New York: D. Appleton & Co., *1926*.

The author has presented for the use of the invalid with gastro-intestinal diseases an analysis of the anatomy and functions of the gastro-intestinal tract. This he follows with discussions of symptoms, food phobias and irregularities of the bowel function. It is amusing to find in one of the concluding chapters on general hygiene the following statement:

> To begin with, the layman is advised to omit all reading pertaining to his body functions, diseases, operations, drugs, food chemistry, diets, or any such subjects.

The book contains much valuable advice, but hardly sufficient to enable a layman to help himself much without medical attention.

UEBER DIE AGRAPHIE UND IHRE LOKALDIAGNOSTISCHEN BEZIEHUNGEN. Von Dr. Georg Herrmann, und Prof. Dr. Otto Pötzl. Heft 35. Abhandlungen aus der Neurologie, Psychiatrie, Psychologie und ihren Grenzgebieten. Herausgegeben von K. Bonhoeffer. Paper. Price, 24 marks. Pp. 380, with 29 illustrations. Berlin: S. Karger, 1926.

As the basis for this work the authors outline a case in which the earliest and most prominent symptom was agraphia associated later with alexia, left hemianopia, disturbances in showing and naming the fingers of the left hand, left hemiparesis, and disturbances in tactile localization on the left side. The focal diagnosis, confirmed exactly at operation and later at necropsy, placed the lesion at the junction of the angular gyrus with the second occipital convolution. The tumor, though malignant in character, was shelled out without difficulty, and the patient improved greatly for a time. The evolution and disappearance of the symptoms lead to the view that agraphia is an individual disturbance of great localizing value and the relations with apraxia, word-blindness and other forms of aphasic disorder are discussed. The book contains an admirable review of the recorded cases and includes the report of a second case observed by the authors, and is an excellent contribution to the subject of the highest motor integrations and their relations to unilateral cerebral activity.

THE EVOLUTION OF ORTHOPAEDIC SURGERY. By Robert Bayley Osgood, A.B., M.D., John B. and Buckminster Brown Professor of Orthopaedic Surgery in Harvard University. First Detroit Orthopaedic Lecture. Auspices of the Wayne County Medical Society, Detroit, Michigan. March 16, 1925. Cloth. Pp. 70, with 49 illustrations. St. Louis: C. V. Mosby Company, 1925.

Here is presented in permanent form the first lecture delivered under the Detroit Orthopedic Lectureship Fund. It is delightful to have a history of orthopedic surgery, beautifully illustrated with portraits of the great contributors to this specialty. The essay concludes with an appeal for more research and less therapy.

THE CITY. By Robert E. Park, Ernest W. Burgess and Roderick D. McKenzie; with a bibliography by Louis Wirth. Cloth. Price, $2.10. Pp. 239. Chicago: University of Chicago Press, 1925.

In this volume, the authors have collected a number of essays on the main factors of community life, largely by Professor Park, but including an essay by R. D. McKenzie on the ecologic approach to the study of the human community, and two by Burgess on the growth of the city and on a scientific basis for neighborhood work. The topics of Professor Park include a discussion of the newspaper, juvenile delinquency, the hobo and other unusual aspects of city life. A valuable bibliography assembled by Louis Wirth completes the text.

DIE BIOLOGIE DER PERSON. Ein Handbuch der allgemeinen und speziellen Konstitutionslehre. Herausgegeben von Prof. Dr. Th. Brugsch und Prof. Dr. F. H. Lewy. Lieferung I. Einführung in die Konstitutionslehre, ihre Entwicklung zur Personallehre. Von Prof. Dr. Th. Brugsch. Das Problem der Individualität. Von Dr. E. Straus. Die rechnerische Auswertung statistischer Beobachtungsergebnisse (Einführung in die Kollektivmasslehre). Von Dr. H. Salinger. Bedeutung des Normbegriffes in der Personallehre. Von Prof. Dr. I. Kaup. Allgemeine Vererbungslehre. Von Prof. Dr. W. Johannsen. Paper. Price, 15 marks. Pp. 322, with 22 illustrations. Berlin: Urban & Schwarzenberg, 1926.

This is the first number of what will presumably be one of those tremendous German systems of knowledge which are at the same time the admiration and despair of the rest of the world. The first number contains essays dealing with the human constitution and the problem of individuality, and three highly technical essays on anthropometry and heredity. According to the plan of the work, it will appear in four volumes: the second concerning somatic and psychophysical conditions; the third, the various organs, and the fourth, human sociology.

FOOD PRESCRIPTIONS FOR OVERWEIGHT. By Harrington Bennett Monroe, M.D. Cloth. Price, $1.50. Pp. 50. Los Angeles: McCulloch Press, 1925.

The author has carefully selected diets for those desiring to reduce 2 pounds each week. Each diet is supplemented by a statement as to its caloric content, indicating an average of 850 calories daily. The book is helpful, quite devoid of frippery, and easily used by the sensible.

PATHOLOGISCHE HISTOLOGIE. EIN UNTERRICHTSKURS FÜR STUDIERENDE UND AERZTE. Von Dr. Max Borst, O. ö. Professor der allgemeinen Pathologie und der pathologischen Anatomie an der Universität München. Second edition. Paper. Price, 48 marks. Pp. 435, with illustrations. Leipsic: F. C. W. Vogel, 1926.

In reviewing the first edition (THE JOURNAL, *July 22, 1922, p. 323*) *we recommended this as a useful guide and commented on the excellence of the illustrations, nearly all in* colors. There are sixty-seven additional pages. Better illustrations replace many in the first edition, and thirty-seven are new. Except the last chapter, given to a consideration of tumors in general, the disease conditions are dealt with entirely by organs; in other words, it is "special pathology," and now a chapter is devoted to organs of internal secretion. Wherever advanced pathology is taught and proper book freedom prevails, some students who read German readily, it is hoped, will possess this work and promote the wholesome influence that is bound to follow its introduction to class rooms where various works are being assiduously consulted and compared.

SIR WILLIAM OSLER. Memorial Number. Appreciations and Reminiscences. Bulletin No. IX of the International Association of Medical Museums and Journal of Technical Methods. Cloth. Privately issued. Pp. 632, with illustrations. Montreal, 1926.

It was a happy idea of the International Association of Medical Museums to issue as one of its bulletins a collection of reminiscences and other writings relative to Sir William Osler. To this collection, Dr. William Welch contributes a foreword, with his personal knowledge of Osler's character and ambitions. The work is divided into several parts, beginning with essays by Welch, Allbutt, Maude Abbott; following with editorials on various aspects of Osler's work; then a number of general articles on Osler's relationship to various medical specialties; then a number of biographic essays, including reminiscences of colleagues and students, and finally presenting the complete annotated bibliography of Osler's writings and of writings about Osler. The book is well printed and handsomely illustrated with numerous original photographs not heretofore available. It does not duplicate the excellent biography of Osler by Harvey Cushing, but is so definitely supplementary to it that every owner of the former volumes might well possess this one also.

NEUROLOGICAL FRAGMENTS. By J. Hughlings Jackson, M.D., F.R.S., F.R.C.P., with Biographical Memoir by James Taylor, M.D., F.R.C.P., and Including the "Recollections" of the Late Sir Jonathan Hutchinson and the Late Dr. Charles Mercier. Cloth. Price, $3.75. Pp. 227, with 1 illustration. New York: Oxford University Press, 1925.

This volume constitutes an adequate memoir of J. Hughlings Jackson. It contains a number of short articles published in the *Lancet* at various intervals, an address to the Hunterian Society, a biography, and two essays concerning Dr. Jackson by Sir Jonathan Hutchinson and Dr. Mercier.

The book is supplemented with a bibliography of Jackson's writings. It is a delightful volume for the library of any neurologist.

Chirurgie du sympathique. Chirurgie du tonus musculaire. La section des rameaux communicants. Par P. Wertheimer, et A. Bonniot, Chirurgien des hôpitaux de Grenoble. Préface du Pr. Leriche. Paper. Price, 22 francs. Pp. 134, with 21 illustrations. Paris: Masson et Cie, 1926.

It is astonishing how many monographs on surgical subjects could be published if one described the gross anatomy of the parts, reviewed only a part of the literature on the physiology of the subject, wrote engagingly of the surgical technic, and for seasoning added a small number of clinical cases, the majority of which have already been recorded by others. The enjoyment one gets from this monograph comes from speculating just how far one man's (Langelaan's) misconstruction and misinterpretation of Sherrington's work and his own loosely controlled experiments, the majority of which have been proved to be erroneous, will lead the surgical profession astray. Here is an example of a repetition as facts of statements which the authors evidently fully accept but have no intention of attempting to corroborate themselves; an example of finding a loophole to escape observations that do not fit in with the scheme of things. This monograph has nothing new or original to give us; it is wholly lacking in a scientific attitude and, as far as we can discover, is only another book to add to the heap of print devoted to armchair philosophy concerning the fundamental principles concerned in the surgery of the sympathetic system.

Non-Surgical Treatment of Diseases of the Mouth, Throat, Nose, Ear and Eye. By Thomas H. Odeneal, M.D., Otologist, Rhinologist, Laryngologist and Ophthalmologist to the Beverly Hospital Corporation, Beverly, Massachusetts. Cloth. Price, $4 net. Pp. 428, with 4 illustrations. Philadelphia: P. Blakiston's Son & Co., 1926.

The author indicates that the book is intended to be of "material assistance to the young specialist and to the general practitioner in particular." While the title indicates that this is nonsurgical treatment of the various parts involved, in a good many instances surgical indications and technic are mentioned as expressions which enhance the value of the context. The work, while not voluminous, nevertheless covers the subject with considerable detail. Numerous practical points are given, and in many instances illustrative prescriptions are included. The work is systematically arranged, and the various paragraphs are well marked with the titles in large type so that reference to the various subjects is easily made. Indications for surgical intervention are based on good judgment, and the therapeutic suggestions show good common sense. In a word, the book should prove of considerable practical value to the general practitioner who is called on to treat some of the more common ear, eye, nose and throat conditions but who has not had the detailed training in those subjects usually possessed by the specialist in these lines.

Handbuch der Hals-Nasen-Ohren-Heilkunde. Herausgegeben von A. Denker und O. Kahler. Sechster Band. Die Krankheiten des Gehororgans. Erster Teil. Anatomie. Entwicklungsgeschichte. Physiologie. Pathologie. Untersuchungsmethoden. Therapie. Paper. Price, 96 marks. Pp. 1274, with illustrations. Berlin: Julius Springer, 1926.

It is impossible in an ordinary review to give any adequate idea of the stupendous work involved in this volume. The mere mention of the names of some of the contributors gives some index of the caliber of the publications: Prof. William Brock on comparative anatomy; Prof. Gustav Alexander on embryology and anthropology; Dr. Herman Marx on malformations of the ear; Professor Koerner on applied anatomy of the ear; Dr. Eckert Moebius on microscopic examination and histology of the ear; Dr. G. Anton on the centers and tracks of the nervus cochlearis and the nervus vestibuli; Karl L. Schaefer and Max Giesswein on physiology of the ear; Prof. H. Neumann and Dr. F. Fremel on physiology of the semicircular canal. Under the heading of pathology and therapy we find such names as Dozent Oscar Beck and Prof. F. R. Nager. This encyclopedic volume holds a world of information and a great mass of detail. There are many wonderful illustrations and a complete bibliography in each section of the subject. When completed, it will probably be the most complete and detailed work on the ear that has as yet appeared. The otologist with a studious sense will find his time spent in the reading most profitable, and the book will probably serve for many years as a source of authoritative information.

Blood Chemistry: Colorimetric Methods. For the General Practitioner; with Clinical Comments and Dietary Suggestions. By Willard J. Stone, B.Sc., M.D., Attending Physician, Los Angeles General Hospital and Pasadena Hospital. Introduction by George Dock, M.D. Second edition. Cloth. Price, $3.25 net. Pp. 129, with 7 illustrations. New York: Paul B. Hoeber, Inc., 1926.

In this edition, Stone's booklet has been almost entirely rewritten "in the hope that it may continue to stimulate interest in methods proved by experience to be readily available to every internist in his own laboratory." In the selection of his methods, the author has properly limited himself to those that have been introduced by our own American investigators and which have proved so valuable in advancing our knowledge of the chemical variations in the blood. The sections dealing with the clinical interpretation of the laboratory observations have been enlarged to keep pace with the literature of the subject, and will prove of much value to the general worker. The dietary tables should prove of especial interest to the clinician in the handling of his cases. We can recommend this work to both the practitioner and the student who may wish to become familiar with the methods of blood chemistry in their daily routine.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

Die Chirurgie: Eine zusammenfassende Darstellung der allgemeinen und der speziellen Chirurgie. Herausgegeben von Prof. Dr. M. Kirschner und Prof. Dr. O. Nordmann. Lieferung 9. Band V. Die Chirurgie der Bauchwand. Von Geh. Med.-Rat. Prof. Dr. W. Muller. Die Lehre von den ausseren Hernien. Von Priv.-Doz. Dr. H. Eggers. Die Chirurgie des Bauchfells und des Netzes. Von Dr. J. Petermann. Die Chirurgie des Wurmfortsatzes. Von Prof. Dr. A. Lawen und Prof. Dr. H. Burckhardt. Paper. Price, 26 marks. Pp. 360, with 104 illustrations. Berlin: Urban & Schwarzenberg, 1926.

New volume on abdominal surgery with essays on hernia, appendectomy and similar subjects.

Ueber das morphologische Wesen und die Histopathologie der hereditaer-systematischen Nervenkrankheiten. Von Karl Schaffer, O. Ö. Professor der Psychiatrie und Neurologie an der Universität Budapest. Heft 46. Monographien aus dem Gesamtgebiete der Neurologie und Psychiatrie. Herausgegeben von O. Foerster und K. Wilmanns. Paper. Price, 24 marks. Pp. 253, with 135 illustrations. Berlin: Julius Springer, 1926.

Monographic report of pathologic changes of nervous system in hereditary types of disease.

A Text-Book of Urology. By Oswald Swinney Lowsley, A.B., M.D., F.A.C.S., Director of the Department of Urology of the New York Hospital, and Thomas Joseph Kirwin, Ph.C., B.S., M.D., Chief of Clinic of the Department of Urology of the New York Hospital. Cloth. Price, $10. Pp. 699, with 246 illustrations. Philadelphia: Lea & Febiger, 1926.

Well illustrated modern textbook covering medical and surgical aspects of diagnosis and treatment of conditions in genito-urinary tract.

A Popular Encyclopedia of Health. By Lee K. Frankel, Ph.D., Second Vice-President, Metropolitan Life Insurance Company, and Donald B. Armstrong, M.D., Sc.D., Assistant Secretary, Metropolitan Life Insurance Company. With the collaboration of Genevieve Fox. Cloth. Price, $3.50. Pp. 366, with illustrations. New York: Albert and Charles Boni, 1926.

Household medical book by trained educators, a useful reference for those who want one.

Handbuch der biologischen Arbeitsmethoden. Herausgegeben von Geh. Med.-Rat Prof. Dr. Emil Abderhalden. Lieferung 196 Abt. V, Methoden zum Studium der Funktionen der einzelnen Organe des tierischen Organismus, Teil 7, Heft 5. Klinische Methoden der Untertierischen Organismus, Teil 7, Heft 5.

suchung des Gehörorgans. Von Erich Schlittler. Paper. Price, 6 marks. Pp. 653-770, with 17 illustrations. Berlin: Urban & Schwarzenberg, 1926.

Additional volumes to an extensive German system covering methods of studying.

Research in Progress at the University of Minnesota, July 1924-July 1925. Compiled by Clarence M. Jackson, M.S., M.D., LL.D., Director of the Department of Anatomy in the University of Minnesota. Research Publications of the University of Minnesota, Bibliographical Series No. 3. Paper. Price, $1.25. Pp. 306. Minneapolis: University of Minnesota, 1926.

Statement of progress in many fields defining the interests of a great university.

Allergische Diathese und allergische Erkrankungen (Idiosynkrasien, Asthma, Heufieber, Nesselsucht u. a.). Von Dr. Hugo Kämmerer, Professor der Universität München. Paper. Price, 13.50 marks. Pp. 210. Munich: J. F. Bergmann, 1926.

Excellent monograph covering recent literature on allergy and hypersensitivity with guide for study of cases in this group.

Hydrogen Ion Concentration of the Blood in Health and Disease. By J. Harold Austin, Professor of Research Medicine, University of Pennsylvania, and Glenn E. Cullen, Professor of Biochemistry, Vanderbilt University Medical School. Cloth. Price, $2. Pp. 75, with 8 illustrations. Baltimore: Williams & Wilkins Company, 1926.

Monograph on present status of technic for determining acid-base relationships in the body.

Surgical Anatomy of the Human Body. Vol. 1—Scalp, Cranium, Brain, Face, Mouth, Throat, Organs of Special Senses. By John B. Deaver, M.D., Sc.D., LL.D., Surgeon-in-Chief to the Lankenau Hospital, Philadelphia. Second edition. Leather. Price, $12. Pp. 551, with illustrations. Philadelphia: P. Blakiston's Son & Co., 1926.

Established guide to the topography of the human structure for surgical explorers.

Leitfaden der neurologischen Diagnostik: Eine Differentialdiagnose aus dem führenden Symptom für praktische Aerzte und Studierende. Von Dr. Kurt Singer, Nervenarzt in Berlin. Second edition. Paper. Price, 9 marks. Pp. 246, with 34 illustrations. Berlin: Urban & Schwarzenberg, 1926.

Second edition of brief German guide to neurologic diagnosis.

Edgar's Practice of Obstetrics: For Students and Practitioners of Medicine. By J. Clifton Edgar, Consulting Obstetrician to Bellevue Hospital, New York City. Revised by Norris W. Vaux, Clinical Professor of Obstetrics in the Jefferson Medical College, Philadelphia. Sixth edition. Cloth. Price, $8. Pp. 779, with 684 illustrations. Philadelphia: P. Blakiston's Son & Co., 1926.

New edition, carefully revised, edited and condensed.

The White Spots of Epilepsy and Other Phases of the Disease. By Edward A. Tracy, M.D., School Physician Boston Public Schools. Cloth. Price, $2.50. Pp. 129, with 12 illustrations. Boston: Richard T. Howard, 1926.

Reprinted essays with special emphasis on a diagnostic sign.

Principles of Human Physiology. By Ernest H. Starling, C.M.G., F.R.S., M.D., Foulerton Professor of the Royal Society. The chapter on the Sense Organs edited by H. Hartridge, M.A., M.B. Cloth. Price, $8.50. Pp. 1074, with 570 illustrations. Philadelphia: Lea & Febiger, 1926.

Fourth edition of a standard textbook, much improved.

Die Licht-Therapie. Von Dr. med. Hans Malten, Leitender Arzt des Dr. Maltenschen Institutes für Nerven- und Stoffwechselkranke, Baden-Baden. Paper. Price, 6.60 marks. Pp. 88, with 66 illustrations. Munich: J. F. Bergmann, 1926.

Serious attempt to put light therapy on a scientific basis.

Précis de radiothérapie profonde. Par Dr. Iser Solomon, radiologiste de l'Hôpital Saint-Antoine. Préface du Dr. A. Béclère, membre de l'Académie de médecine. Paper. Price, $2.40. Pp. 512, with 172 illustrations. Paris: Masson & Cie, 1926.

French guide to radiotherapy.

Rational Gland Therapy for Women, Particularly in Relation to Menstruation. By I. Wanless Dickson, M.B., F.R.C.S. Cloth. Price, $2. Pp. 96. New York: Paul B. Hoeber, Inc., 1926.

Not so much rational as hopeful or credulous.

Report upon the Work of the Miners' Phthisis Medical Bureau for the Twelve Months, ended July 31st, 1924. Union of South Africa. Paper. Price, 4s. 0d. Pp. 56. Cape Town, 1926.

Statistical Report of the Health of the Navy for the Year 1923. Paper. Price, 5s. net. Pp. 149. London: His Majesty's Stationery Office, 1926.

Medicolegal

Denied Mandamus to Compel Issuance of License

(Haas v. Hassig et al. (Kan.), 242 Pac. R. 127)

The Supreme Court of Kansas says that this action was one of mandamus to compel the state board of medical registration and examination to issue to the plaintiff a license to practice medicine and surgery in the state of Kansas. He was graduated in 1920 from the Kansas City (Mo.) College of Medicine and Surgery. In November, 1923, after full investigation, the state board of health (in Missouri) found the Kansas City college to be a nonreputable medical college. The college refuses to permit the American Medical Association to inspect it for purpose of classification, and is graded as a class C institution. The state board of this state (Kansas) approves the classification of the American Medical Association, and, by rule adopted in 1918, does not recognize class C colleges. The licensing boards of forty-three states do not recognize the Kansas City institution. It claims to be an eclectic medical college, but the National Eclectic Association does not recognize it. The state of Arkansas has three licensing boards—one an eclectic medical board. That board recognizes the Kansas City institution, and, in 1921, granted the plaintiff a license to practice in Arkansas. In February, 1923, the plaintiff made application for a license to practice in Kansas, which was refused on the following ground:

> The eclectic medical examining board of Arkansas, being in disrepute owing to its loose methods in the past, is no longer recognized by this board, and no application for reciprocity upon the indorsement from that board will be accepted or taken up for consideration by this board until such time as the Arkansas eclectic board will prove that they are upholding the standard of the profession as adopted by the medical profession and the boards of the states in the U. S.

Plaintiff charges the state board of medical registration and examination with abuse of discretion and arbitrary conduct discriminatory against him. It is true that the board, as it was constituted from June, 1923, to February, 1925, was guilty of favoritism. It arbitrarily admitted four men in violation of its own rules. The record is barren of justification or excuse, and the influences operating to produce the result are not revealed. The present board has adhered to its rules, and what plaintiff desires is a writ of mandamus to compel it to act irregularly. The board had authority to promulgate, and has authority to enforce, the rules that exclude plaintiff from practicing medicine and surgery in Kansas. The writ of mandamus will not be granted to compel a breach to those rules. Furthermore, if some dispensation were permissible, plaintiff is not a person to be considered favorably, because of his contumacy. For two years he has pertinaciously practiced medicine in this state in defiance of its laws. The writ is denied, all the justices concurring.

Arteriosclerosis a Disease—Expert Evidence

(Order of the United Commercial Travelers of America v. Nicholson et al. (U. S.), 9 Fed. R. (2d) 7)

The United States Circuit Court of Appeals, second circuit, in reversing a judgment that was rendered for the plaintiffs, says that they brought this action to recover on an insurance certificate issued by the defendant fraternal beneficial order to their father. Their theory was that he met his death because of a fall which he had in going up a stairway. But three physicians testified that the fall might have been due to arteriosclerosis, and that evidence stood uncontradicted. There was also evidence in the record as to his difficulty in walking, which was quite significant. The contract on which this action was brought was limited to an insurance against the results of bodily injury "effected through external, violent and accidental means" which should be the sole and only cause of the death, disability or loss. The trial judge was asked to charge that the plaintiffs could not recover if disease contributed to the death of the insured in any degree. The judge gave that charge, but qualified it by saying, "I should say further that arteriosclerosis of certain arteries of the body is not disease within the meaning of the word in this charge." This court does not doubt that he erred in the qualification which he attached to the requested instruction. The arteries, like the brain, the lungs and the other organs of the human body, may become diseased. It is common knowledge, of which this court can take judicial notice, that arteriosclerosis is a frequent cause of death, and that one who is in an advanced state of arteriosclerosis, as it was testified that the insured was, is not only diseased, but very dangerously diseased.

In a case such as this, in which reliance is placed on expert or opinion evidence, it is important to point out to the jury that the opinion of an expert has no probative force in case the jury fails to find that the facts assumed in the hypothetic question were true. And a court should not permit a jury to be influenced by evidence on which they cannot, within the laws of correct reasoning, make a finding. This court thinks that the jury in this case might well have been instructed, in considering purely expert testimony and the weight to be attached to it, that it was their duty to consider whether the facts embodied in the hypothetic question had been established by a preponderance of the evidence.

Again, the physician who attended the insured at the hospital testified that lobular pneumonia was the direct cause of his death. But neither that physician nor any other witness testified that in his opinion the death of the insured was occasioned by accident alone and was independent of all other causes. In order that the plaintiffs might recover, it was necessary for them to prove that disease did not contribute "in any degree" to cause death. To say that the fall caused shock, shock caused lobular pneumonia, and that the latter caused death, did not prove the plaintiffs' case, even if a jury believed it; for in such a case disease would contribute in some degree to cause death.

Regarding Rule of Privilege—Measurement of Damages

(Darling v. Pacific Electric Ry. (Calif.), 242 Pac. R. 703)

The Supreme Court of California says that a physician was called by the plaintiff for the purpose of testifying that another witness, one Minnock, was physically unable to be present in court. This was for the purpose of laying a foundation for the introduction of Minnock's deposition, taken some time prior thereto. It was unquestioned that the relation of physician and patient had been established as a matter of law. The physician, after testifying generally on direct examination that Minnock could not be present in court, was interrogated by counsel for the defendant, who endeavored to elicit the exact nature of the patient's infirmities. On his own motion the physician refused to testify in this behalf on the ground that to do so would violate a professional confidence. The trial court sustained the physician in his refusal to testify, and in so doing no error was committed.

The provision of the code of civil procedure that a licensed physician or surgeon cannot, without the consent of his patient, be examined in a civil action as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient, is a personal privilege given to the patient, and no one, except in certain specified cases, has the right to waive it for him. This rule of privilege applies although the patient is not a party to the action in which a disclosure is sought and is not present to object. There was no express or implied waiver of this privilege in the instant case, and, in the absence thereof, the physician was clearly within his rights in refusing to testify concerning a matter that could not be divulged without a breach of professional confidence. The defendant argued that in giving his deposition Minnock, the patient, waived the privilege accorded by the code of civil procedure the same as the testator did *In re Mullin*, 110 Calif. 252, 42 Pac. 645, in making his physician a subscribing witness to his will. The rule enunciated in the Mullin case, however, cannot be extended to embrace such a situation as was presented in the instant case. In making a privileged person a subscribing witness to a will the testator must be deemed to have actually waived the privilege, for it is incumbent on such witness to testify, if called on, in order to prove the will, concerning the soundness of the mind of the testator, whereas in the instant case the physician was called as a witness only for the purpose of explaining the absence of the person whose deposition was sought to be offered in evidence. He did not testify, nor did he attempt to testify, concerning the person's competence to make such deposition.

The court does not think that the amount of damages—$15,000—awarded by the jury to the plaintiff, Mrs. Darling, whose left foot was so badly crushed by one of the defendant's electric cars as to render amputation necessary, was so large or so disproportionate as to be palpably the result of prejudice and passion. Courts have repeatedly refrained from attempting to establish any precise rule for the measurement of damages in actions for personal injuries, but, rather from necessity, leave the measurement to the sound sense and fair judgment of the jury. A verdict, therefore, will not be disturbed because excessive, unless the amount of damages is obviously so disproportionate to the injury proved as to justify the conclusion that the verdict was not the result of the cool and dispassionate discretion of the jury.

Employee Not Required to Have Operation for Cataract

(Gulf States Steel Co. v. Cross (Ala.), 106 So. R. 870)

The Supreme Court of Alabama, in affirming a judgment in favor of plaintiff Cross under the workmen's compensation act, says that the court below found due compensation for him for permanent total disability in the loss of sight of one eye, resulting from a cataract produced by a blow from a flying fragment of ore in mining operations. The evidence, presented by bill of exceptions, clearly supported the court's finding. A motion made on the trial to suspend compensation until the employee submitted to surgical treatment, which had not been tendered theretofore, might well be overruled, unless the tender of treatment was so made as to give the employee reasonable opportunity to be properly advised in that regard. Moreover, where the expert witnesses were, as they were here, equally divided as to the nature and cause of the cataract and whether an operation would be successful, the court properly declined to suspend compensation, under section 7567 of the code of Alabama of 1923, for refusal to submit to an operation. Statutes of this kind are not construed as requiring the employee to submit to an operation as a condition to compensation, unless there is reasonable assurance of success and the operation is free from serious danger.

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Colorado Springs, Sept. 13-18. Dr. Luther C. Peter, N. E. Cor. Chestnut and 20th Streets, Philadelphia, Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Chicago, Sept. 20-22. Dr. James E. Davis, 111 Josephine Ave., Detroit, Secretary.

American Climatological and Clinical Association, Philadelphia, Sept. 27-28. Dr. A. K. Stone, Auburn Street, Framingham Center, Massachusetts, Secretary.

American Electrotherapeutic Association, Atlantic City, Sept. 8-11. Dr. Richard Kovacs, 223 E. 68th Street, New York City, Secretary.

Colorado State Medical Society, Colorado Springs, Sept. 21-23. Dr. F. B. Stephenson, 460 Metropolitan Building, Denver, Secretary.

Idaho State Medical Association, Sandpoint, Sept. 2-5. Dr. J. N. Davis, Kimberly, Secretary.

Indiana State Medical Association, West Baden, Sept. 22-24. Mr. T. A. Hendricks, Hume-Mansur Building, Indianapolis, Executive Secretary.

Kentucky State Medical Association, Frankfort, Sept. 20-23. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Michigan State Medical Society, Lansing, Sept. 14-17. Dr. F. C. Warnshuis, Powers Theatre Building, Grand Rapids, Secretary.

Missouri Valley, Medical Society of the, Council Bluffs-Omaha, Sept. 15-17. Dr. Charles Wood Fassett, 115 East 31st St., Kansas City, Mo., Sec'y.

Nevada State Medical Association, Reno, Sept. 24-25. Dr. H. J. Brown, Gray-Reid Building, Reno, Secretary.

Wisconsin, State Medical Society of, Madison, Sept. 15-17. Mr. J. G. Crownhart, 153 Oneida Street, Milwaukee, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to The Journal in North America for a period of three days. Foreign journals prior to 1921, or domestic journals prior to 1923, are not available. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

1:257-391 (Feb.) 1926

*Digital Manifestations of Subacute Bacterial Endocarditis. G. Blumer, New Haven, Conn.—p. 257.
*Bundle-Branch Block. J. E. Talley and O. K. Reed, Philadelphia. —p. 262.
*Heart Block: Barium Chloride Treatment. G. R. Herrmann and R. Ashman, New Orleans.—p. 269.
*Anatomy of Blood Vessels in Valves of Human Heart. M. A. Kugel, New Haven, Conn., and L. Gross, New York.—p. 304.
*Spontaneous Rupture of Heart. C. E. de la Chapelle, New York.—p. 315.
*Auricular Beats Due to Stimulation of Auricles by Contracting Ventricles During Complete Heart Block. P. S. Barker, Ann Arbor, Mich. —p. 349.
Estimating Myocardial Reserve. W. D. Stroud, Philadelphia.—p. 354.
Organic Heart Disease. L. I. Dublin, New York.—p. 359.

Digital Manifestations of Subacute Bacterial Endocarditis.—The detection of digital lesions in the form of Osler nodes, tender digits, splinter hemorrhages or clubbing of the fingers, Blumer regards as being of great value in the diagnosis of doubtful cases of subacute bacterial endocarditis. No conclusions can be drawn at present as to the frequency of these different phenomena. The great discrepancies as to the frequency of their occurrence, which are noted in the literature, are probably due not so much to regional variations in their occurrence as to differences in observational capacity and to lack of knowledge of their occurrence and significance. It is probably safe to assume that, as they become more widely known, they will be more frequently observed and that the apparently great differences in their frequency, according to different authors, will disappear.

Bundle-Branch Block.—Twenty-eight cases of bundle-branch block are reported by Talley and Reed. They include nineteen with right branch block, one with temporary right, three with characteristic left, four with left, with reduced voltage, and one with both temporary right and left branch defect. All showed some degree of cardiovascular sclerosis, many an advanced degree. Prolonged periods of rest averted for months or years the final breakdown. Restricted use of digitalis helped at times. In this series the patients with left branch defect were among the shortest lived.

Heart Block.—Two clinical cases of heart block are presented by Herrmann and Ashman, which showed unusually significant therapeutic responses. The spectacular results of barium chloride therapy as well as the effects of other drugs are discussed in detail. An explanation of the mechanism of heart block is offered.

Blood Vessels in Heart Valves.—Evidence is presented by Kugel and Gross to prove that: blood vessels exist in some valves in a small percentage of hearts other than those of fetuses; these are of developmental and not of inflammatory origin; they occur most frequently in the aortic leaflet of the mitral valve, and may exist either in what is termed the complete or incomplete form. The proof of the existence of arteriae valvulares should put new impetus into the study of the mechanism of valvular endocarditis and render tenable the belief in the possible embolic origin of at least some forms of valvular endocarditis.

Spontaneous Rupture of Heart.—Fourteen cases of spontaneous rupture of the heart are analyzed and described by de la Chapelle. Eleven of the patients were representatives of the laboring class; no members of the professional class were represented. Syphilis was not an etiologic factor in any case. Arteriosclerosis was the predominant factor in all of the fourteen cases. A thrombus was found in twelve of the cases; the ramus descendens of the left coronary artery was thrombosed in nine instances, the main trunk in one, the circumflex branch in one, and the right coronary in one. Nine of the hearts ruptured while in the stage of acute infarction. Microscopically, the site of rupture exhibited necrosis of the muscle, with infiltration of red blood cells and leukocytes. True fatty degeneration was present in five of the fourteen cases, representing the sequel to infarction and necrosis rather than the cause of rupture. Six of the cases presented arteriosclerotic interstitial nephritis; four showed arteriosclerotic changes in the vessels of the brain; otherwise, the findings in the viscera were irrelevant.

Auricular Beats with Contracting Ventricles.—A case is reported by Barker in which the auricles responded to stimulation by the ventricles during complete A-V heart block. This is explained by the mechanical stimulation by the contracting ventricles of the A-V bundle above the lesion producing the block, with retrograde conduction of the impulse to the auricles.

Archives of Internal Medicine, Chicago

37:733-866 (June) 1926

*Arteriosclerosis and Increased Blood Pressure. F. R. Nuzum, B. Seegal, R. Garland and M. Osborne, Santa Barbara, Calif.—p. 733.
*Diagnosis of Pulmonary Neoplasm. M. Fishberg, New York.—p. 745.
*Diagnostic Aid in Evaluating Vigor of Inspiratory Costal Excursion. C. F. Hoover, Cleveland.—p. 773.
Corrigan's Description of Aortic Insufficiency. L. Clendening, Kansas City, Mo.—p. 780.
*Confirmatory Sign of Free Fluid in Pleural Space. M. Lasersohn, Richmond, Va.—p. 793.
*Biliary System Function Tests. W. P. Murphy, Boston.—p. 797.
Water Metabolism. III. Dehydration Fevers. E. Andrews, Chicago. —p. 815.
*Method for Continuous Quantitative Estimation of Gastric Secretion and Discharge in Man. A. L. Bloomfield and C. S. Keefer, Baltimore. —p. 819.
*Relation of Erythrocyte Sedimentation Reaction to Ability of Flocculation of Plasma and Serum. E. H. Rubin, New York.—p. 848.
*Seasonal Variation in Onset of Acute Diabetes. S. F. Adams, Rochester, Minn.—p. 861.

Arteriosclerosis and Increased Blood Pressure.—By feeding various excessive protein diets to experimental animals for periods as long as two years, Nuzum and his associates have obtained increased blood pressures. The animals in which the most marked increase of blood pressures were obtained presented extensive arteriosclerosis of the aorta and in many instances of the coronary arteries. Evidence of kidney injury was also obtained, as demonstrated by chemical studies of the blood and of the urine. It has been demonstrated that increased blood pressure and arteriosclerosis can be produced without an increase of cholesterol in the diet. Excessive amounts of fat were found in the liver and myocardium of animals whose diet was high in cholesterol.

Diagnosis of Pulmonary Neoplasm.—The clinical aspects of sixty cases of primary malignant disease of the bronchi, lung and pleura are discussed by Fishberg. In thirty-six cases necropsies were obtained. Contrary to the prevailing opinion in clinical circles, Fishberg found that the diagnosis of the disease can be made during life in the majority of cases. When the symptomatology and physical signs are carefully gone into and properly interpreted, the chances of error are no higher than in other chronic pulmonary diseases. While roentgen-ray examination and the study of the cytology of the sputum and pleural exudates are invaluable in many cases, and mostly as corroborative evidence, the history, symptomatology and physical signs are most important.

Evaluating Vigor of Inspiratory Costal Excursion.—The lessened vigor of excursion of the ribs in any region, Hoover asserts, will give evidence for any lesion that may diminish the extensibility of the underlying lung when the extent of excursion may reveal no evidence and when percussion and auscultation reveal no evidence for diminished resonance or increased density of the lung and when adventitious auscultatory signs are wanting. Because extensibility is the first attribute affected in all pulmonary diseases, any impairment of this attribute offers the earliest procurable evidence for regional lung disease.

Sign of Free Fluid in Pleural Space.—Dulness and decrease in the intensity of the breath sounds high in the axilla of the affected side, Lasersohn says, is a confirmatory sign of free fluid in the pleural sac. Dulness with an increase in the intensity of the breath sounds high in the axilla on the side that otherwise shows the classical signs of free fluid does not confirm this diagnosis, and is usually indicative of consolidation rather than of fluid. This sign appears to be of value in differential diagnosis, especially between a thick pleura at the base and free fluid. The amount of fluid present is roughly proportional to the extent and degree of dulness and of decrease in the intensity of the breath sounds high in the axilla. The high level in the axilla of free fluid due to capillarity and the degree of retraction of the lungs forms the basis for the signs of fluid in the axilla.

Biliary System Function Tests.—Murphy relates his experiences with the Rosenthal modification of the phenoltetrachlorphthalein test in fifty cases and the so-called icterus index modified from the work of Blankenhorn and of Meulengracht in 206 cases. In order to simplify the latter test and to make it more universally available for clinical use, Murphy devised a method in which the color comparisons may be made without the use of the colorimeter by using various dilutions of potassium bichromate, which correspond with colorimetric index figures. He does not regard the Rosenthal test as of practical value as a diagnostic aid, except possibly in relation to the complications of pregnancy. Information of equal or greater value may be obtained by means of the much simpler icterus index test. The icterus index is of definite diagnostic value in distinguishing between the primary and the secondary types of anemia. Information of value may be obtained in cases in which obstruction of bile ducts occurs. In fact, the icterus index test is a test of considerable practical value to the clinician. The information obtained is of quantitative value and is easily obtained with little technical skill, expenditure of time and apparatus.

Estimation of Gastric Secretion and Discharge.—A method is described by Bloomfield and Keefer by which may be determined simultaneously the rate of gastric secretion and discharge, as well as other details of gastric function.

Erythrocyte Sedimentation Reaction and Serum Flocculation.—Depending on the toxicity of a disease process, a proportional increase in the erythrocyte sedimentation reaction and the ability of flocculation of the plasma and serum, as determined by the Frisch and Starlinger, Gerlóczy and Mátéfy reactions, was found by Rubin. The Darányi reaction was negative in forty cases studied.

Seasons and Acute Diabetes.—The case records of 1,000 patients with diabetes were studied by Adams. In this group there were 317 cases that could be classified as acute and in which the disease began so suddenly that there could be no question as to the time. Seventy-seven and three-tenths per cent of the patients studied came from Minnesota, Montana, Michigan, Nebraska, the Dakotas, Iowa, Wisconsin, northern Illinois and central southern Canada. The possible relationship between the onset of acute respiratory infections and the onset of diabetes is obvious. Diabetes of the acute progressive form, as seen in the Middle West, is a disease that begins more frequently in the fall, winter and spring than in the summer. A more sedentary life and a greater incidence of acute respiratory infections during this period suggest a combination of circumstances favorable for the precipitation of diabetes. Diabetes is a disease that gradually increases in incidence with age up to 60, after which there is a sudden decline in frequency, due probably to the falling off of the population of persons over 60. It is slightly more prone to affect males than females.

Archives of Physical Therapy, X-Ray, Radium, Omaha

7: 315-377 (June) 1926

Use of High Frequency Currents from Surgeon's Standpoint. A. D. Willmoth, Louisville, Ky.—p. 315.
Diathermy in Gynecology and Genito-Urinary Practice. B. H. Hager, Madison, Wis.—p. 326.
Carbon Arc Light Lamp. A. Stein, Wiesbaden, Germany.—p. 334.
Electrical Aspects of Endothermy. J. G. Maupin, New York.—p. 343.
Treatment of Burns by Ultraviolet Light. E. B. Kessler, St. Joseph, Mo.—p. 347.

Arkansas Medical Society Journal, Little Rock

23: 1-16 (June) 1926

Hypertrophied Thymus. N. D. McCormack, Fort Smith.—p. 1.
Maternal and Child Hygiene. M. W. Koenig, Little Rock.—p. 4.

Boston Medical and Surgical Journal

194: *1105-1154 (June 17) 1926*

Interrelations of Physicians and Hospital. W. Darrach, New York.—p. 1105.
Orthopedic Work in Boston Floating Hospital. L. A. O. Goddu, Boston.—p. 1111.
Season of 1925 in Boston Floating Hospital. L. W. Smith, Boston.—p. 1120.

194: 1155-1204 (June 24) 1926

*Diabetic Gangrene: Value of Insulin in Treatment. H. Blotner and R. Fitz, Boston.—p. 1155.
*Insulin in Infant Feeding. H. Green and G. Robbins.—*p. 1162.*
Feeding of New-Born Infant from Obstetrician's Point of View. F. C. Irving, Boston.—p. 1167.
*Habitual Vomiting, Inanition and Constipation in Child Associated with Megacolon. S. M. Jordan, Boston.—p. 1168.
Value of Preventorium in Tuberculosis Work. W. A. Griffin, Sharon, Mass.—p. 1171.
Decline of Mortality *from* Tuberculosis Among Infants and Children. A. K. Krause, Baltimore.—p. 1173.

Diabetic Gangrene.—Blotner and Fitz report on a clinical study of sixty-nine cases of diabetic gangrene. In their experience, gangrene has been a relatively frequent complication of diabetes, occurring in 7 per cent of all diabetic patients admitted to the hospital. Gangrene usually depends on obliterative vascular lesions in the extremities of elderly diabetic patients, with superimposed infection, thrombosis or osteomyelitis. It may, however, occur in young people with essentially normal blood vessels and may be of infectious origin. It is likely to recur so that one attack does not prevent subsequent attacks. The underlying cause of the vascular disease encountered in the majority of cases of diabetic gangrene is unknown. Syphilis was of but little importance as an etiologic factor in these cases, and the relation of the biochemical changes encountered in diabetes to the development of arteriosclerosis was a matter of speculation. Trauma, often of a very minor nature, was the immediate cause of the gangrene in 65 per cent of cases. More cases originated during the winter than during the summer months. Two patients developed gangrene while at rest and under observation in the hospital. Twenty-three per cent of the patients in this series died while under treatment in the hospital. The most important immediate cause of death was infection, at times developing as an overwhelming general infection from a small local lesion. Other less important causes of death were shock, or unavoidable vascular accidents. Gangrene is often a preventable complication of diabetes. The avoidance of dirt, of minor injuries, of cold hands and feet and of too sedentary a life are important prophylactic measures against gangrene. The treatment of gangrene consists in the employment of medical or surgical measures. Experience with the medical treatment of gangrene has not been noteworthy. In comparing cases of diabetic gangrene in which the treatment was surgical in some instances with and in others without the administration of insulin, it appears that insulin has afforded a means for rapidly desugarizing patients before operation and for allowing them to take a liberal diet during the period of convalescence from operation.

Use of Insulin in Infant Feeding.—Green and Robbins report good results from the use of insulin in the treatment of malnourished infants. The dose of insulin was based on the ratio of 1 unit of insulin per 15 Gm. of carbohydrate in the diet.

Habitual Vomiting: Inanition and *Constipation.*—The treatment followed by Jordan in his case consisted of putting the colon as completely at rest as is possible. The boy remained at rest in bed for three weeks on a diet low in colonic residue and free of chemical irritants to the colon. Heat and antispasmodic drugs were administered for a time. After four weeks no further medication was given, and cathartics or enemas have never been given since the beginning of treatment.

Georgia Medical Association Journal, Atlanta

15: 173-221 (May) 1926

Cancer of Pancreas and Bile Passages D. C. Elkin, Atlanta.—p. 173.
Malignant Diseases of Colon, Cecum and Appendix. E. C. Davis, Atlanta.—p. 175.
Cysts of Mesentery. C. Usher, Savannah.—p. 179.
Maxillary Sinusitis B. M. Cline, Atlanta.—p. 181.
Appendical Abscess H. R. Donaldson, Atlanta.—p. 187.
Appendicitis in Childhood W. W. Battey, Augusta.—p. 189.
Radium Treatment of Four Hundred and Twenty Nine Cases of Cervix Carcinoma. A. C. Primrose, Americus.—p. 194.
Middle Ear Diseases: Complications and Sequelae. L. E. Brawner, Atlanta.—p. 198.

Journal of Cancer Research, New York

10: 1-159 (April) 1926

*Effect of Sodium on Cell Division. C. Packard, New York.—p. 1.
*Inheritance Behavior of Cancer as Simple Mendelian Recessive. M. Slye. Chicago.—p. 15.
*Chemotherapeutic Experiments with Coal Tar Dyes on Spontaneous Mouse Tumors. B. T. Simpson and M. C. Marsh, Buffalo.—p. 50.
*Iodine Irritation Does Not Produce Cancer. J. Rosenstirn, New York.—p. 61.
*Gye's Hypothesis of Etiology of Malignant Tumors. M. J. Harkins, J. F. Schamberg and J. A. Kolmer, Philadelphia.—p. 66.
*Experimental Tumor in White Rat. L. Herly, New York.—p. 102.
Immunity to Tumor Growth. H. Chambers and S. Russ, London.—p. 109.
Immunization of Cancer Bearing Mice. S. Itami, London.—p. 115.
*Immunizing Power of Normal Mouse Tissues Against Transplantable Carcinoma. S. Itami, London.—p. 128.
Enzyme Action. XXXVII. Comparative Lipase Actions of Human Tumors. K. G. Falk and H. M. Noyes, New York.—p. 146.

Effect of Sodium on Cell Division.—The results of Packard's experiments suggest that the rate of growth of rat tumors is directly associated with the ratio between calcium and sodium in the blood.

Cancer Inheritance a Mendelian Recessive.—In every one of more than 5,000 primary spontaneous neoplasms, including nearly every type known in human pathology studied by Slye, the inheritance behavior of cancer susceptibility has been that of a simple mendelian recessive.

Experimental Coal Tar Cancer.—Simpson and Marsh's purpose was to test representatives of all the major chemical groups into which the innumerable coloring matters derived from coal tar are classified, and to this end they selected seventy actual or potential dyes. No attempt was made to select toxic compounds, to combine them with metals, or to confine them to agents having medicinal, vital staining, or tumoraffin properties, but rather to seek any organic bodies in this group which might in any way influence growth of spontaneous tumors and, hence, furnish a possible clue to specific or general action in chemotherapy. The results have been entirely negative.

Iodine Not a Cancer Producer.—Various iodine preparations, both alcoholic and aqueous, were painted by Rosenstirn for eighteen months on the skin of 200 white mice known to be susceptible to cancer; they produced a local infiltration only with lymphocytes and fibroblastic elements. At a later stage, a hyperplastic fibrosis resulted, encroaching on the glandular structures of the skin. No hyperkeratosis could be observed at any stage.

Gye's "Specific Factor" in Tumor Production.—Investigations made by Harkins, Schamberg and Kolmer throw considerable doubt on the destruction of the infectivity of the "specific factor" prepared according to Gye's technic. They cannot confirm the evidence of growth of the virus of the Rous chicken sarcoma in subcultures, nor can they corroborate the statement that the so-called specific factor acts by reason of the presence of a chemical substance. The authors' results suggest that the "specific factor" is in reality nothing more than a suspension of attenuated living virus which may or may not produce a tumor depending on the fowl's susceptibility or resistence.

Experimental Tumor in Rats.—Only one of sixteen rats surviving for 444 days after being subjected to skin painting with coal tar was found on the five hundred and eleventh day to have a skin horn with an underlying tumor infiltrating the skin and presenting all the characteristic appearances observed in the tar cancers produced in the mouse.

Immunizing Power of Normal Mouse Tissues Against Carcinoma.—Itami asserts that resistance to tumor transplantation can be brought about by previous treatment with some, but not all, of the derivatives of all three germ layers. Analysis of the immunizing power of the blood cells shows that washed erythrocytes are ineffective, and that both the granular leukocytes and lymphocytes will elicit resistance, the latter being somewhat more efficient than the former.

Journal of Clinical Investigation, Baltimore

2: 409-455 (June 20) 1926

*Formed Elements in Urinary Sediment of Normal Individuals. T. Addis, San Francisco.—p. 409.
*Effect of Some Physiologic Variables on Number of Casts, Red and White Blood Cells and Epithelial Cells in Urine of Normal Individuals. T. Addis, San Francisco.—p. 417.
*Skin Capillaries in Cases of Polycythemia Vera. G. E. Brown and C. Sheard, Rochester, Minn.—p. 423.
*Cardiac Output in Pneumonia in Dog. T. R. Harrison and A. Blalock, Nashville, Tenn.—p. 435.

Formed Elements in Urinary Sediment.—Addis gives the averages and ranges of variation in the twelve-hour rates of excretion of casts, red and white blood cells and epithelial cells found in urine obtained from seventy-four normal persons. The averages of eighty-two counts on these subjects were: casts, 1,040; red blood cells, 65,750; white blood cells and epithelial cells, 322,500. The type of cast found was the hyaline variety. There were only three instances in which a single epithelial or granular cast was discovered. The hyaline casts only rarely contained any cell inclusions, and fat droplets were never seen.

Formed Elements in Normal Urine.—Quantitative determinations made by Addis of the number of formed elements in the urine of normal persons failed to show that either bodily movements of various types or the ingestion of a large amount of protein in the form of meat had any statistically significant effect.

Skin Capillaries in Polycythemia Vera.—Brown and Sheard state that the large increase in the circulating volume of erythrocytes in cases of polycythemia vera produces distention of the blood vessels, the venous vessels assuming the larger portion of this increase. The capillaries of the skin become distended, more markedly in their venous portion; and additional capillaries are formed. These changes have been studied quantitatively by photomicrographic methods, and have been compared to similar data obtained from normal subjects. The ratio of the total area of visible capillary blood to a unit area of skin is determined and found to be definitely increased. The demonstrable increase in the size and number of the capillaries exceeds the changes in the blood. There is a gradual decrease in the size and number of capillaries with reduction of the cell volume.

Cardiac Output in Pneumonia.—The output of the heart of the dog has been studied by Harrison and Blalock by the Fick method. In pneumonia the cardiac output is usually increased. When the infection is of short duration and either mild or overwhelming, the increase is less than in the severe, well developed pneumonia of longer duration. The increase in cardiac output appears to bear little relation to changes in oxygen consumption, but appears to depend to some extent on anemia and to a greater extent on anoxemia. On the assumption that the cardiac output is also increased in pneumonia in man, heart failure is to be ascribed to the increased strain on the circulation rather than to weakness of the myocardium. From this point of view, oxygen and digitalis appear to be definitely indicated, whereas the value of caffeine and camphor is questionable.

Journal of General Physiology, Baltimore

8: 403-507 (June 20) 1926

Physiology of Self Sterility in Plants. E. M. East, Boston.—p. 403.
Transplantation and Potential Immortality of Mammalian Tissues. L. Loeb, St. Louis.—p. 417.
Relations of Individual Ampullae of Semicircular Canals to Individual Eye Muscles. I. Horizontal Canals. S. S. Maxwell and O. L. Huddleston, Berkeley, Calif.—p. 441.
Effect of Pure Protein Solutions and Blood Serum on Diffusibility of Calcium. R. F. Loeb, New York.—p. 451.
Analysis of Growth of Normal White Mouse Into Its Constituent Processes. T. B. Robertson, Adelaide, South Australia.—p. 463.

Journal of Industrial Hygiene, Baltimore

8: 257-290 (June) 1926

Significance of Zinc in Living Organism. K. R. Drinker and E. S. Collier, Boston.—p. 257.
Incidence of Disease Among Hospital Patients, with Reference to Occupation. E. H. Lewinski-Corwin and A. E. Conover, New York.—p. 270.
Mild Cyanide Poisoning: Case. D. C. Parmenter, Boston.—p. 280.
Industrial Surgeon's Treatment of Fractures. L. Stewart, Clearfield, Pa.—p. 283.

Laryngoscope, St. Louis

36: 313-390 (May) 1926

Pathology of Deaf-Mutism. F. R. Nager, Linck, Switzerland.—p. 313.
Acute Mastoiditis Without Apparent Middle Ear Symptoms. M. A. Weinstein, Philadelphia.—p. 320.
Should Use of Terms First, Second and Third Degree Nystagmus Be Continued? G. W. Mackenzie, Philadelphia.—p. 325.
Perforation of Nasal Septum. L. Blumenfeld, New York.—p. 333.
Two Cases of Brain Abscess in Patients Suffering from Nasal Accessory Sinus Disease. R. E. Parrish, Washington, D. C.—p. 336.
Lipoma of Pharynx. F. R. Herriman, New York.—p. 339.
Tonsillar Infection as Cause of Ménière's Disease. J. Daland, Philadelphia.—p. 345.
Agranulocytic Angina: Case with Fracture of Tibia. R. J. Hunter, Philadelphia.—p. 348.
Acute Laryngeal Edema. D. N. Husik, Philadelphia.—p. 352.
Bronchoscopic Treatment of Lung Suppuration: Posttonsillectomy Type. M. C. Myerson, New York.—p. 356.
Low Perforation of Trachea from Gunshot Wound: Case. T. J. Carmody, Danville, Ill.—p. 362.
Acute Infection of Epiglottis and Larynx: Tracheotomy and Recovery. L. Daily and N. A. Allen, Houston, Texas.—p. 367.
Foreign Bodies in Esophagus with Respiratory Symptoms Complicating Diagnosis: Four Cases. J. B. Naftzger and T. R. Gittins, Sioux City, Ia.—p. 370.

New York State Journal of Medicine, New York

26: 489-534 (June 1) 1926

*Hay-Fever and Asthma. W. G. Lewi, Albany.—p. 489.
Painful Disabilities of Fore Foot (Metatarsalgia). D. E. McKenna, New York.—p. 494.
*Biochemical Metabolic Blood Origin of Asthma and Its Scientific Prevention. G. N. Jack, Buffalo.—p. 502.

26: 535-584 (June 15) 1926

Syphilis of Stomach. S. S. Oppenheimer, B. B. Crohn, A. Winkelstein and J. M. Marcus, New York.—p. 540.
Pulmonary Syphilis. G. G. Ornstein, New York.—p. 541.
Treatment of Ataxia of Tabes. M. Crossman, New York.—p. 546.
Labyrinth Tests as Aid in Diagnosis of Syphilis of Central Nervous System. R. Almour, New York.—p. 547.
Treatment (Fordyce-Rosen) of Congenital Syphilis in Infants and Young Children. H. Sherwood, New York.—p. 550.
Therapy of Syphilis. L. Chargin and A. Stone, New York.—p. 551.
Demonstration of Spirochetes. A. Jacoby, M. Nemser and W. Seckel, New York.—p. 552.
Syphilis in Negro. H. Fox, New York.—p. 555.
Kahn Test for Syphilis. R. L. Kahn, Lansing, Mich.—p. 557.
Books and Periodicals on Syphilis. F. Place, New York.—p. 558.
What Price Syphilis? W. F. Snow and W. M. Brunet, New York.—p. 560.
Syphilis in Pregnancy. A. C. Beck, New York.—p. 563.
Treatment of Syphilis. J. H. Stokes, Philadelphia.—p. 564.
Syphilis from Standpoint of Internist. U. J. Wile, Ann Arbor.—p. 570.

High Frequency Treatment of Hay-Fever and Asthma.—Reporting on the results accruing from the use of high frequency electricity in the treatment of hay-fever and asthma, Lewi says that of all the cases of hay-fever and asthma treated, 91 per cent showed satisfactory improvement. Of the cases reporting asthma as one of the symptoms, 95 per cent were markedly improved.

Asthma Is of Blood Origin.—A study of 1,431 cases of asthma has clinched Jack's belief that asthma is of blood origin and not a nerve reflex or spasm. He maintains that there are three well defined vicious circles of asthma; namely, the lymphocytic, the toxic-leukocytic and the anemovascular. From thirty minutes to two or more weeks before an attack of dyspnea, the nutrition, metabolism, blood and lymph, of the body physicochemics of the asthmatic patient are unusually distributed or perverted, as manifested by polyuria, a coated tongue, flatulency, indicanuria, chyluria, acidosis or occasionally glycosuria. The stools are generally toxic, putrid and alkaline with a rotten egg or meat odor, or they are acid, gaseous, fermenting with a disgusting, irritating, penetrating odor, often showing mucus and particles of undigested food. This disturbed nutrition produces toxic substances or deleterious chemical reagents that, when absorbed from the intestine by the lymph and blood, either in the form of gases, liquids or putrefactive alkaloids, so interfere with the chemistry of the asthmatic patient's unstable blood that it disintegrates. After the blood disintegrates, it becomes loaded with a waste and useless material which must be dumped and will be dumped along the line of least resistance, which in the asthmatic patient is the mucous membranes of the head and air tubes. The disintegrated material must be eliminated from the blood by starvation, the drinking of hot water, cathartics, as castor oil and liquid petrolatum, equal parts, or cascara, and by diuretics and expectorants. Cathartics that increase the viscosity of the blood, such as epsom salt should not be used. The blood should be kept slightly plus in alkalinity by the manipulation of the diet and, occasionally, the administration of alkalis. When there is any tendency to edema, salt should be restricted. The rechemistration of the asthmatic patient's unstable blood must be assisted by prescribing foods that contain the deficient blood chemicals and that are rich in vitamins or chlorophil and protoplasm.

Philippine Islands Medical Association Journal, Manila

6: 149-182 (May) 1926

Dystocia Due to Ball-Valve Action of Fetal Head: Five Cases. M. Tolentino, Manila.—p. 149.
*Calcium Content of Blood in Leprosy. I. Concepcion and J. Salcedo, Manila.—p. 154.
Blood Grouping of Filipinos. W. Pascual, Manila.—p. 157.
*Local Treatment of Burns. A. Y. Mandanas, Manila.—p. 161.

Calcium Content of Blood in Leprosy.—Determination of the calcium content of the blood of patients in various stages and of different forms of leprosy under treatment revealed that the values for calcium in all the cases examined, except paroled and suspect cases, were within the normal limits. The average calcium found in cases of less than one year duration was much less than in those of more than one year duration. No marked difference was noticed in the two types of leprosy. Concepcion and Salcedo assert that the slight increase in the calcium content observed in patients that have recovered and have been paroled was not due to the effect of the injection of ethyl ester.

Local Treatment of Burns.—The treatment of burns advocated by Mandanas consists of washing the burned surface with warm sterile water, or with 2 per cent sodium bicarbonate solution or any mild antiseptic solution, to remove the foreign bodies. All desquamated skin is carefully trimmed. All blebs are punctured and the contents gently pressed out. The surface is dried gently with sterile gauze or absorbent cotton, and sterilized powder, as dermatol, thymol iodide, zinc oxide, or zinc stereate, is thinly and evenly dusted on the burned area. The bed is placed in a part of the ward in which there is plenty of air and sunshine, but so as to avoid exposure of the patient directly to the sun.

Philippine Journal of Science, Manila

29: 447-612 (April) 1926

*Constancy of Types of B. Dysenteriae. K. I. Morishima, Manila.—p. 447.
Illicit Beverages. R. T. Feliciano, Manila.—p. 465.
Philippine Flora, II. E. D. Merrill, Berkeley, Calif.—p. 475.
Two New Fishes from Lake Lanao. A. W. C. T. Herre, Manila.—p. 499.
Morphology and Tectonics of North Coast of New Guinea. J. Zwierzycki.—p. 505.
New Stephanidae from Borneo and Philippine Islands. E. A. Elliott, London.—p. 517.
New Muscoid Flies of Oriental, Australian and African Faunas. C. H. Tyler-Townsend, São Paulo, Brazil.—p. 529.
Opiliones from Mount Maquiling in Luzon. C. F. Roewer, Bremen, Germany.—p. 545.
Syrphids (Diptera) of Philippines and Malaya. P. Sack, Frankfort-on-the-Main, Germany.—p. 563.

Constancy of Types of Bacillus Dysenteriae.—As far as can be concluded from his experiments, it appears to Morishima that the classification, grouping and subgrouping of *B. dysenteriae* are not of such importance as some authors appear to believe. The Shiga-Kruse group, as far as his experiments are concerned, appears to be stable, as it was impossible to induce any of the numerous cultures of this type to ferment mannite. In the other main group, however, which is characterized by its ability to ferment mannite, there appears to be considerable variability in the fermentative property of certain carbohydrates other than mannite. The subgrouping of the mannite fermenters, therefore, appears to be of little importance, and all the members of this main group should be considered as more or less interchangeable variants. It appears, therefore, that mannite is the most important differential carbohydrate in the grouping of dysentery bacilli.

Missouri State Medical Association Journal, St. Louis

23: 201-236 (June) 1926

Responsibility of Organized Medicine to Public. E. P. North, St. Louis. —p. 201.
*Differential Diagnosis of Various Types of Spinal Cord Lesions. E. Sachs, St. Louis.—p. 204.
Ductless Gland Disorders: Complaints Referable to Other Systems. W. Engelbach, St. Louis.—p. 206.
Id. Gynecologic Conditions. W. H. Vogt, St. Louis.—p 209.
Id. Diseases of Nose and Throat. E. T. Senseney, St. Louis.—p. 210.
Id. Diseases of Eye. M. Wiener, St. Louis.—p. 211.
Id. Cardiovascular Disturbances. D. Luten, St. Louis.—p. 213.
Id. Dermal Lesions. M. F. Engman, St. Louis.—p. 214.

Spinal Cord Lesions.—Sachs insists that every spinal lesion that shows a focal level has not been given a fair chance unless it has been explored. In 132 laminectomies, his mortality has been 12.7 per cent but 7 per cent of these patients died from their disease and not from operation.

Nebraska State Medical Journal, Norfolk

11: 209-248 (June) 1926

Physician and Progressive Thought. H. J. Lehnhoff, Lincoln.—p. 209.
Staphylococcus Septicemia. B. C. Russum, Omaha.—p. 214.
*Protozoan Infections of Bowel in Nebraska. G. W. Covey, Lincoln.— p. 220.
Diagnosis of Some Common Eye Diseases. S. R. Gifford, Omaha.— p. 222.
Crooked Backs. J. E M. Thomson, Lincoln.—p. 230.
Pathology of Malnutrition. 14. Acid-Base Equilibrium. V. E. Levine, Omaha.—p. 233.

Protozoan Infections of Bowel in Nebraska.—Covey feels that protozoan infestations of the intestinal tract are increasing in number in Nebraska. He reports six cases of *Endameba histolytica*, four of *Chilomastix* and one of *Trichomonas* infestation. Most of these patients had never been out of the temperate zone and, excepting two, have practically always lived in eastern Nebraska or western Iowa. Of the five cases of *Endameba histolytica* infestation, two ended fatally as a direct result of this infection.

New Jersey Medical Society Journal, Orange

23: 261-328 (June) 1926

Infant Feeding. J. H. Marcus, Atlantic City.—p. 261.
Cryptic Injuries. D. B. Allman, Atlantic City.—p. 263.
Treatment of Spiral Fractures. D. Gordon, New York.—p. 269.
Control of Measles, Diphtheria and Scarlet Fever. J. F. Anderson, New Brunswick.—p. 273.
Activities of Isolation Hospital. F. A. Pringle, Belleville.—p. 279.
Differentiation of Smallpox from Chickenpox. E. D. Newman, Newark. —p. 283.
Diphtheria and Schick Testing. J. W. Gardam, Newark.—p. 286.
Scarlet Fever and Measles. E. E. Worl, Newark.—p. 287.

New Orleans Medical and Surgical Journal

78: 793-872 (June) 1926

Sterility: Air Insufflation as Aid in Diagnosis. P. Graffagnino, New Orleans.—p. 798.
Gallbladder Disease: Metabolic Aspect. D. N. Silverman, New Orleans. —p. 801.
*Mercurochrome Intravenously in Urology. H. W. E. Walther, New Orleans.—p. 804.
Diarrhea. F. S. Hill, Grenada, Miss.—p. 806
*Quinidine and Ouabain in Certain Cardiac Diseases. C. Jamison, New Orleans.—p. 809.
Addison's Disease: Three Cases, One in Negro. I. I. Lemann, New Orleans.—p. 814.
*Splenectomy. I. Cohn, New Orleans.—p. 820.
*Pellagra: Hydrochloric Acid in Stomach Contents. J. B. Guthrie, New Orleans.—p. 830.
Headaches. C. D. Blassingame, Memphis, Tenn.—p. 836.

Status of Mercurochrome in Urology.—Walther's experiences with intravenous mercurochrome-220 soluble in urology convince him of its value, particularly in the treatment of those cases which fail to respond promptly to the accepted methods of therapy universally employed. He says that small doses, frequently repeated, will give satisfactory results and are not injurious.

Use of Ouabain in Cardiac Cases.—Jamison's experience with ouabain, principally by the intravenous route, in cases of aortic regurgitation and in the large hearts of syphilis with failure of the left side of the heart, has been very satisfactory. He says that it has saved life and restored comfort to many patients, who would not have been helped by the measures in common use. Dyspnea is relieved very quickly.

Splenectomy.—Cohn has found splenectomy in properly selected cases an operation that results in great benefit to the patient. Rupture of the spleen, splenic anemia, hemolytic jaundice, and thrombocytolytic purpura represent the group from which the greatest benefits may be expected.

Achlorhydria in Pellagra.—In a series of thirty-five cases of pellagra, Guthrie has encountered a larger percentage of cases with entire absence of hydrochloric acid in the gastric contents than has occurred in tabulations published by others. He is inclined to consider the lack of hydrochloric acid as of some diagnostic value in this disease. In a doubtful case presenting a normal hydrochloric acid content, he would consider its presence somewhat against the diagnosis of pellagra.

Northwest Medicine, Seattle

25: *285-310 (June) 1926*

Celiac Disease. J. H. Hess, Chicago.—p. 285.
Postoperative Pulmonary Abscess. E. Holman, San Francisco.—p. 290.
Pulmonary Abscess. C. R. Castlen, Seattle.—p. 294.
Surgical Treatment of Lung Abscess. T. W. Buschmann, Seattle.— p. 297.
Fluoroscopic Examination of Chest. W. A. Smith, Bellingham, Wash. —p. 300.
Service of Radiologist to General Practitioner. J. Aspray, Spokane.— p. 303.
Septicemia. H. C. Bean, Portland, Ore.—p. 306.
*Appendicitis in Infant. P. W. Sweet, Centralia, Wash.—p. 310.
*Effect of Impaired Vision on Lincoln's Personal Habits. E. E. Maxey, Aberdeen, Wash.—p. 310.
Intra-Ocular Hemorrhage. C. W. Shannon, Seattle.—p. 312.
Rôle of Skin in General Medicine. L. B. Kingery, Portland, Ore.— p. 314.
Industrial Medicine: Relation to State Medicine. N. R. Wallentine, Sandpoint, Ida.—p. 317.
*Butesin Picrate in Eye, Ear, Nose and Throat Surgery. J. G. Parsons, Lewistown, Mont.—p. 322.
*Simple Device for Treating Cervical Gonorrhea. A. Poska, Seattle.— p. 323.

Appendicitis in Infant.—Sweet reports a case of suppurative appendicitis, occurring in an infant, aged 16 months. The appendix was not of easy access, so it was not removed. Drainage was instituted. The child made an uneventful recovery.

Abraham Lincoln's Vision.—Maxey asserts that Lincoln was a sufferer from some type of heterophoria (eye muscle imbalance), very probably a hyperphoria or cyclophoria. Certain of Lincoln's habits are referred to as supporting this assumption.

Butesin Picrate as *Anesthetic*.—The anesthetic value of butesin picrate is extolled by Parsons. The 1:2,000 aqueous solution, producing almost instantaneous superficial anesthesia, makes it useful in the removal of superficial foreign bodies. The 1 per cent *ointment* is valuable as a postoperative dressing, and in the treatment of burns and ulcers of the cornea. The aqueous solution of butesin picrate exerts a beneficial sedative and antiseptic effect in hyperesthetic rhinitis and after nasal operations and for the removal of tonsils. The 1 per cent ointment is of value for impregnating gauze employed in packing the nose after septum or antrum operations. A 5 per cent mixture of butesin picrate with acetylsalicylic acid, 95 per cent, makes a very useful powder for insufflation into the tonsillar fossae after tonsillectomy. The postoperative discomfort is greatly reduced by the use of this powder.

***Treatment* of Cervical Gonorrhea.**—The device used by Poska consists of a section of glass tubing from 20 to 24 cm. in length, and from 5 to 8 mm. in diameter, with an inside diameter of from 2 to 6.25 mm. One end has a 2 to 2.5 cm. bevel, while the opposite end is ground square with the sharp edge rounded off. The beveled end is designed to facilitate the loading of the device and to minimize the soiling of hands or clothing with the medicament. A glass rod for the larger sizes and the long round wooden applicator for the small sizes, to act as a plunger, complete the apparatus.

Occupational Therapy and Rehabilitation, Baltimore

5: 165-242 (June) 1926

Problem of Expatient. W. I. Hamilton, New York.—p. 165.
Program of Occupational Therapy for Tuberculous Patients. B. W. Carr, Washington, D. C.—p. 175.
Articles Produced by Tuberculosis Patients in Occupational Therapy Work. J. A. Smith, New York.—p. 193.
Activities of Junior League of Indianapolis in Connection with James Whitcomb Riley Hospital. N. L. Brush, Indianapolis.—p. 197.
Whittling as Minor Craft in Occupational Therapy. S. H. Knowles, New Bedford, Mass.—p. 201.
Butterfly Decorations in Reed-Trays. H. S. Deary, Oneonta, N. Y. —p. 207.

Oklahoma State Medical Association Journal, Muskogee

19: 140-167 (June) 1926

Pyelitis. W. J. Wallace, Oklahoma City.—p. 140.
Endamebiasis Complicated by Subphrenic Abscess. L. D. Long, Oklahoma City.—p. 144.
Well Baby Clinic. C. H. Hall, Oklahoma City.—p. 148.
Polycystic Kidney. J. Frischer, Kansas City, Mo.—p. 150.

Physical Therapeutics, Baltimore

44: *307-362* (June) 1926

Basic Principles of Curative Action of Electrical Energy. W. J. Turrell. —p. 307.
Ultraviolet Therapy. A. F. Hess, New York.—p. 319.
Electrically Heated Paraffin Bath. U. V. Portmann, Cleveland.—p. 333.
Diathermy in Treatment of Multiple Sclerosis. J. W. Stephenson, New York.—p. 336.
History of American Electrotherapeutic Association. G. B. Massey, Philadelphia.—p. 339.
Acute Pyelitis with Hyperpyrexia. V. C. Pedersen, New York.—p. 344.
Case of Renal Hematuria. M. C. L. McGuinness, New York.—p. 346.

Virginia Medical Monthly, Richmond

53: 141-206 (June) 1926

*Toxic Action of Digitalis on Heart Muscle. W. B. Porter, Roanoke. —p. 141.
Treatment of Breast Tumors. J. L. Rawls, Norfolk.—p. 145.
*Intravenous Administration of Gentian Violet and Mercurochrome in Sepsis. J. S. Horsley, Richmond.—p. 148.
Rationalistic View of Psychoneuroses. D. D. V. Stuart, Jr., Washington, D. C.—p. 154.
*Tuberculous Peritonitis Treated with Air Injections. N. Mercer, Richmond.—p. 157.
*Report on Sputum Examinations of 1,425 Cases of Pulmonary Tuberculosis. R. C. Eley and F. B. Stafford, Charlottesville.—p. 159.
Urinary Calculi. B. P. Seward, Richmond.—p. 162.
Prostatism. R. M. LeComte, Washington, D. C.—p. 168.
"Come Over into Our Village and Help Us." A. B. Grubb, Cripple Creek.—p. 172.
Occasional Causes of Failure in Regional Anesthesia for Hernia Operations. E. M. Hanrahan, Jr., Baltimore.—p. 173.
Endometrial Cell Invasions. A. L. Stavely, Washington, D. C.—p. 176.
Management of Lobar Pneumonia. A. E. Murray, Beaverdam.—p. 181.
Treatment of Acute Lobar Pneumonia. W. A. Cambell, Old Church. —p. 183.
Cancer of Gastro-Intestinal Tract Below Diaphragm. S. O. Black, Spartanburg, S. C.—p. 184.
Somatic Side of Mental Patient. V. B. Williams, Washington, D. C. —p. 186.

Toxic Action of Digitalis on Heart Muscle.—Porter reports five cases in which there was cardiac evidence of digitalis overdosage. The disturbance of rhythm observed in these patients closely paralleled that observed in animals poisoned with digitalis. In two instances there was observed an undoubted idioventricular rhythm having the characteristics of an ectopic ventricular tachycardia. In the third case there was a transition from normal Q R S complexes into a typical levocardiogram, indicating right bundle branch block. This appeared in paroxysms and disappeared after the withdrawal of digitalis, with evident improvement in the patient's clinical condition.

Gentian Violet and Mercurochrome in Sepsis.—In doses varying from 3 to 7 mg. per kilogram of body weight, properly prepared 0.5 to 1 per cent aqueous solutions of gentian violet were given by Horsley intravenously fifty-one times to thirty-eight septic patients, with decided improvement in twenty-one and with only three reactions. In cases of sepsis, in which gram-positive staphylococci were the sole or predominant etiologic organism, and in which the lesions were accessible to the blood stream, the intravenous use of gentian violet was justifiable and often most beneficial. In doses varying from 3 to 5 mg. per kilogram of body weight, freshly prepared, 1 per cent aqueous solution of mercurochrome-220 soluble was given intravenously, with subsequent improvement in only four cases of sepsis out of twelve treated. Sepsis caused by gram-negative organisms of the colon bacillus group and by the gonococcus showed most improvement in this series of eighteen injections. Nine moderate and two severe reactions occurred. An absence of reaction was usually followed by no definite improvement. The more severe the reactions (as characterized chiefly by the rise in temperature), usually the more definite and lasting was the improvement. Doses of less than 3 mg. per kilogram of body weight with either of the two dyes were of little, if any, value. Often several injections at intervals of one or several days were necessary to obtain the full therapeutic effect.

Air Injections in Tuberculous Peritonitis.—Mercer regards this form of treatment as the best for tuberculous peritonitis.

Results of Examination of Tuberculous Sputum.—Of 1,425 positive cases of pulmonary tuberculosis, in which Eley and Stafford examined the sputum, only 44 per cent showed tubercle bacilli. Emphasis is placed on repeated examinations of the sputum in any case in which there is cough and expectoration persistent for more than four weeks. The far advanced cases gave the most frequent positive results and the minimal cases the least.

West Virginia Medical Journal, Charleston

22: *281-336* (June) 1926

Drama of Surgery in West Virginia. C. R. Ogden, Clarksburg.—p. 286.
Duration of Passive Immunity in Measles Prophylaxis. G. M. Lyon, Huntington.—p. 291.
Differential Diagnosis of Syphilis and Focal Infection from Eye and Ear Manifestations. G. W. MacKenzie, Philadelphia.—p. 292.
Rational Procedure Leading Toward Diagnosis. R. Kessel, Charleston. —p. 301.
Chronic Nephritis: Classification and Treatment. G. H. Barksdale, Charleston.—p. 305.
Acute Parenchymatous Nephritis. W. R. Morris, Alpoca.—p. 308.
Painless Childbirth. N. Poliakoff, Huntington.—p. 312.
*Verminous Abscess. C. F. Fisher and W. P. Bittinger, Richwood.—p. 314.
Cancer of Mouth. J. C. Bloodgood, Baltimore.—p. 316.

Ascaris Lumbricoides Causes Intestinal Abscess.—Fisher and Bittinger report the case of a boy, aged 16, who complained of attacks of severe cramps in the region of the umbilicus. The entire abdomen was painful to touch, and the boy was unable to lie on his back or to extend his limbs. His bowels moved several times with pain, associated with dysuria. The point of greatest tenderness seemed to be midway between the umbilicus and the pubes in the midline. Rectal examination revealed midline tenderness high up in the pelvis, and a suggestive mass. A diagnosis was made of diffuse peritonitis, possibly of appendicular origin. Operation was done. The condition of the appendix did not explain the physical findings. In view of the rectal tenderness, the pelvis was explored. A dense firm mass was easily delivered and proved to be a part of the ileum. The ileum at a point about 18 inches from the cecum was very firm and rigid for the distance of about 9 inches, and of a dull, purplish red, exhibiting over its surface small ecchymotic spots. Midway in this area, situated at the amesenteric border, was an area even more firm than the rest, the size of an English walnut and raised above the surrounding tissue. On closer examination a small yellow point was seen near the edge of this elevated area. On manipulation the yellow point suddenly enlarged. It proved to be the tail of a worm, *Ascaris lumbricoides.* The worm seemed to be contained in a pocket, located in and formed by the wall of the bowel. No opening could be found between this pocket and the lumen of the bowel, and no gas escaped. The pocket contained about 1 drachm of yellowish brown fluid. No other worms could be found in the bowel by palpation.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

20: 147-220 (June 24) 1926

Immunization with Dead and Attenuated Trypanosomes. I. J. Kligler and I Weitzman.—p. 147.
Second Case of Sleeping Sickness in Sudan Caused by Trypanosoma Rhodesiense. R. G. Archibald and D. Riding.—p. 161.
Development of Hookworm Larvae. II. P. A. Maplestone.—p. 167.
Transmission of Cutaneous Leishmaniasis to Man from Phlebotomus Papatasii. S. Adler and O. Theodor.—p. 175.
Case of Cerebrospinal Meningitis in Trinidad. J. L. Pawan.—p. 195.
Giardia Intestinalis Treated with Stovarsol. J. L. Pawan.—p. 197.
Pyelitis Associated with Endameba Histolytica. J. L. Pawan.—p. 199.
Infection with Lagocheilascaris Minor (Leiper). J. L. Pawan.—p. 201.
Development of Onchocerca Volvulus Leuchart in Simulium Damnosum Theob. D. B. Blockloch.—p. 203.

British Journal of Radiology, London

31: 163-198 (May) 1926

Cholecystography in Diagnosis of Cholecystic Disease. R. D. Carman.—p. 163.
Food Suitable for Radiologic Examination. Colombier.—p. 175.
Surgical Diathermy in Treatment of Hemorrhoids. W. Bierman.—p. 178.
Therapeutic Value of Red Rays. G. M. Levick.—p. 185.
Motor Mechanism of Digestive Mucous Membrane. G. Forssell.—p. 189.

31: 199-238 (June) 1926

*Roentgenograms of Infarcts of Lung. G. Boehm.—p. 199.
Roentgenology of Pulmonary Anthracosis. L. Edling.—p. 207.
Hospital Radium Service. S. Russ and R. H. Somerset.—p. 218.

Roentgenograms of Lung Infarcts.—Boehm reports a case of infarct of the lung observed roentgenologically until after complete recovery had occurred. The case shows that a severe infarct of the lung may heal, without leaving traces sufficient for recognition of the nature of the healed process.

British Medical Journal, London

1: 977-1022 (June 12) 1926

*Preventive Medicine as Applied to Obstetrics. J. M. M. Kerr.—p. 977.
Diverticula of Esophagus. J. Morley.—p. 981.
*Radiation Treatment of Exophthalmic Goiter. J. H. D. Webster.—p. 985.
Treatment of Throat and Ear Cases in Children. Retrospect of Five Years' Work in Elementary Schools. H. Smurthwaite.—p. 986.
*Production of Immunity by Filtrates from Streptococci Isolated from Vagina in Pregnancy. M. E. Robertson.—p. 988.
Electrical Treatment of Tic Douloureux. W. J. Turrell.—p. 989.
Amblyopia with Hemorrhages Due to Tobacco and (?) Lead Poisoning. M. Gilchrist.—p. 990.
Glycosuria and Artificial Sunlight. C. Barrowman.—p. 990.
Intestinal Obstruction by Gallstone. D. J. B. Wilson.—p. 990.

Preventive Medicine in Obstetrics.—Remedial measures suggested by Kerr as necessary to lower maternal and infant mortality in childbed are: Hospital accommodations should be increased. All nursing homes and private houses in which women are received for their confinements should satisfy the health authorities. Power should be secured by the local health authorities to remove a patient from her dwelling house to hospital if the house is deemed unsuitable for a confinement. As far as possible, primiparas should have their confinements in a hospital or nursing home. It is of the very greatest importance that the training of maternity nurses should be extended, and that every two or three years they should have a revision course in an institution. Rubber gloves should be worn by midwives and nurses. A sterilized outfit should be supplied for the confinement. Better training of students in clinical midwifery is imperative. A period of continuous and uninterrupted training in obstetrics and gynecology is the best arrangement to secure satisfactory instruction in these departments. If general practitioners are to continue to undertake obstetric practice, it would be almost necessary for them to undergo revision courses in hospitals every two or three years.

Radiotherapy of Exophthalmic Goiter.—The radiologic view as to the treatment of exophthalmic goiter is put thus by Webster: Of those patients who are not cured by medical measures only a small percentage cannot be relieved by irradiation, while a large percentage are cured.

Production of Immunity Against Vaginal Streptococci in Pregnancy.—The results of Robertson's experiments suggest strongly that protection against the vaginal streptococci may be afforded by previous inoculation with the filtrates from their broth cultures. It is a question whether an antistreptococcal serum to be used for the treatment of puerperal fever might not be more potent and give more satisfactory results if made up of two components—an antitoxic and an antibacterial—the one to be obtained by the injection of streptococcal soluble toxins, the other by injection of the bacteria themselves in the usual way.

1: 1023-1072 (June 19) 1926

*Heredity in Relation to Mental Disease and Mental Deficiency. F. Mott.—p. 1023.
Hemorrhage About and After Menopause. W. F. Shaw.—p. 1026.
*Compression of Nerve Fibers. J. S. B. Stopford.—p. 1028.
*Efficacy and Standardization of Hemostatics. J. W. Pickering and A. Hemingway.—p. 1029.
Acute Duodenal Obstruction Due to Neonatal Volvulus. A. H. Baker and V. Mizen.—p. 1031.
*Case of Embolectomy. C. Gordon-Watson.—p. 1032.
Acute Suffocative Pulmonary Edema. I. Associated with Cardiac Disease. A. E. Hodder, S. M. Hebblethwaite, M. Rockfelt and E. V. Slaughter.—p. 1033.
Id. II. Occurrence in Children. S. McNaughton.—p. 1034.
Id. III. Fatal Type. E. Bulmer.—p. 1034.
Id. IV. Dry Cupping: Recovery. T. G. Garry.—p. 1034.
Scurvy Simulating Acute Intussusception. R. R. Foote.—p. 1035.
Cortical Localization of Vision. K. MacKenzie.—p. 1035.

Heredity and Mental Disease and Deficiency.—A study of 4,000 cards of relatives in the London County Council asylums and a large number of carefully recorded pedigrees, Mott says, has shown that certain types of insanity are very liable to hereditary transmission. They are: (1) involutional melancholia, (2) manic depressive insanity and (3) dementia praecox. Involutional melancholia in a grandparent may be followed, in the next generation, by manic depressive insanity, or dementia praecox in the third generation. A frequent sign of hereditary transmission was the existence of two, three, four or five members of the same co-fraternity affected with dementia praecox, manic depressive insanity or imbecility.

Compression of Nerve Fibers.—Attention is directed by Stopford to the frequent occurrence in spinal compression of a dissociated sensory loss, similar to that previously described as a result of compression of peripheral nerves. Since the first indications of this characteristic sensory disturbance may be discovered at a fairly early stage in the development of the compression and before the onset of profound paralytic symptoms, they may be regarded as a valuable aid to diagnosis. This often renders it possible to undertake the relief of compression before it has caused irreparable injury to the spinal cord. In the present state of knowledge, it is not possible to advance any explanation of the occurrence of this dissociation, but there is evidence which suggests that hypalgesia and thermohypesthesia may appear before actual degeneration of fibers has occurred in either the peripheral nervous system or the spinal cord.

Standardization of Hemostatics.—A method of standardizing the coagulant action of hemostatics is described by Pickering and Hemingway. Those hemostatics which precipitate blood plasma are said to be ineffective. Coagulen, thromboplastin, cephalin, protogulin, hemoplastin, fibrogen and 10 per cent solution of sodium citrate were found effective coagulants when the temperature of the blood is maintained at 37.5 C. Some are also effective at room temperature. Stress is laid on the maintenance of the temperature of the wound at 37.5 C. in the use of hemostatics. The experimental results recorded in this paper agree with the clinical observations on the efficacy of the hemostatics investigated, but are at variance with the findings of those investigators who have employed blood kept fluid by either oxalates or citrates.

Embolectomy.—On the day following confinement, Gordon-Watson's patient developed an embolus of the femoral artery. Under local anesthesia Gordon-Watson removed an embolus from the bifurcation of the artery with some recent thrombus from above, passing a probe up the artery until blood flowed. The artery was closed with fine silk, and pulsation was restored to the limb immediately after the operation. Shortly after the patient was returned to bed, it was noted that pulsation in the femoral could not be obtained. The patient died the same evening, about three hours later. Before death pulsation was absent from both femorals. Postmortem examination showed that thrombosis had occurred in the right common femoral artery up to the bifurcation of the aorta and down to the junction of the external and internal iliacs on the left side. Mitral stenosis, bilateral pleural effusion, and chronic interstitial nephritis were also found.

Edinburgh Medical Journal

33: 329-400 (June) 1926

Relationship of Thymus and Testes to Growth. D. N. Paton.—p. 351.
Oxycephaly. D. M. Greig.—p. 357.
*Value of Sgambati's Test in Detection of Peritonitis in Children. G. H. Dodds.—p. 377.

Value of Sgambati Test in Detection of Peritonitis.—The Sgambatti test was carried out by Dodds in 177 cases. He does not regard the test as being pathognomonic of inflammatory infections of the peritoneum. Positive results were obtained in many cases in which no peritonitis existed, and the percentage of positive cases was as high in interval appendicitis as in acute generalized peritonitis. The test was positive in every case of pneumococcal peritonitis, while in peritonitis secondary to appendicitis 50 per cent of the results were negative. The fact that the reaction became apparent in a urine hitherto negative when the patient developed an acute infective disease is significant. It was demonstrated that the results of the tests were not affected by the reaction of the urine. Albumin, if present, had to be removed before the test could be carried out, and sugar did not occur in any of the specimens examined.

Indian Medical Gazette, Calcutta

61: 261-320 (June) 1926

Medical Aspects of Life Insurance in India. E. Houseman.—p. 261.
Principles in Testing of Cure. H. W. Action.—p. 271.
Suprapubic Lithotomy. S. C. Das Gupta.—p. 279.
"Pallang" (Penile Ornament): Dyak Curio. C. L. Samsom.—p. 283.
Severe Anaphylactic Reaction Following Injection of Amino-Sticurea. N. Chatterjee.—p. 284.
Empyema of Antrum of Highmore. J. F. Lobo.—p. 284.
Anaphylactic Asthma Successfully Treated by Peptone Injections. S. S. Attrish.—p. 285.
Malaria. K. C. Bannerjee.—p. 285.
Case of Cephalotetanus. K. S. Ranganathan.—p. 286.
Case of Endemic Funiculitis. J. Phillips.—p. 287.
Asthma. G. R. Rao.—p. 287.
Treatment of Tetanus. B. I. Kewalram.—p. 288.
Fever Due to B. Fecalis Alkaligenes. Y. S. Row.—p. 289.
Case of Ectopia Vesicae. M. D. David.—p. 290.
Pregnancy Complicated by Fibroma of Cervix Uteri. G. S. Aiyer.—p. 290.

Journal of Physiology, London

61: 305-464 (June 22) 1926

Conduction of Nervous Impulse in Narcotized Region of Nerve. S. Cooper.—p. 305.
Osmotic Pressure of Proteins of Human Serum and Plasma. E. B. Verney.—p. 319.
Blood Count and Body Temperature in Normal Rats. A. D. Stammers.—p. 329.
Relation of Work and Heat in Tortoise Muscle. J. Wyman, Jr.—p. 337.
Conduction of Respiratory Nervous Impulses Through Regions of Block Produced by Pressure. G. Briscoe.—p. 353.
Influence of Length on Responses of Unstriated Muscle to Electrical and Chemical Stimulation, and Stretching. F. R. Winton.—p. 368.
Action of Pituitary Extract on Pregnant Uterus of Rabbit. H. H. Knaus.—p. 383.
*Cellular Activity and Cellular Structure in Thyroid. W. Cramer and R. J. Ludford.—p. 398.
Venous Pressure of Eye: Relation to Intra-Ocular Pressure. W. S. Duke-Elder.—p. 409.
*Secretion of Pancreatic Juice. J. Mellanby.—p. 419.
Spleen and Resistance of Red Cells. D. Orahovats.—p. 436.
Determination of Hydrogen-Ion Concentration of Blood. L. E. Bayliss, P. T. Kerridge and R. C. Verney.—p. 448.
*Output of Hemoglobin and Blood by Spleen. E. W. H. Cruickshank.—p. 455.

Cellular Activity of Thyroid.—Conditions were established by Cramer and Ludford which induce intense activity and complete inactivity, respectively, of the thyroid glands. A very clear relationship could be demonstrated between the functional state of the gland and the mitochondria. In the resting glands, the mitochondria are barely visible. In the active gland, they show an enormous enlargement. The condition of the mitochondria presents, therefore, a criterion for the functional state of the gland, and may, as Goetsch has suggested, be useful in the study of pathologic conditions of the thyroid. The Golgi apparatus shows the same changes that have been observed in the other gland cells in rest and activity: a simple, contracted form in the resting cell, an enlarged convoluted form during activity, followed by a disintegration into granules. The significance of the mitochondrial changes from the point of view of cell mechanics is discussed. The mitochondria represent a mechanism by which the cell can produce great variations in surface energy within the cytoplasm. On the basis of accepted views such variations must be accompanied by changes in the distribution of the lipoids within the cytoplasm and the cell membrane. These changes, in turn, would affect the permeability of the cell.

Secretion of Pancreatic Juice.—Mellanby avers that the introduction of bile of an adequate reaction into the duodenum of a cat causes a copious secretion of pancreatic juice. The duration of pancreatic secretion after the injection of a given quantity of bile into the duodenum is determined mainly by the distribution of secretin in the intestinal mucosa. The immediate stimulus for the secretion of pancreatic juice is secretin. Secretin contained in the cells of the intestinal mucosa is carried into the portal blood associated with the bile salts contained in the fluid absorbed from the intestine. The facts offer an adequate basis for the appreciation of the severe digestive disturbances that occur in catarrhal jaundice.

Blood and Hemoglobin Output of Spleen.—A method is described by Cruickshank for estimating, in cats, the blood and hemoglobin output of the spleen without exposure of the organ. Corroboration is given to the fact that the spleen is a reservoir for blood. The capacity of acting as a reservoir for blood and of concentrating hemoglobin is a peculiar property of the spleen not shared by other muscular organs, e. g., the tongue.

Lancet, London

1: 1183-1240 (June 19) 1926

Freudian Psychology. C. S. Myers.—p. 1183.
Pathologic Action of Light on Eye. W. S. Duke-Elder.—p. 1188.
*Relationship Between Destruction of Tissue and Bactericidal Power of Blood. G. R. McCowen.—p. 1192.
*Great Dilatation of Left Auricle. C. F. T. East.—p. 1194.
*Neoplasms of Mediastinum. F. H. Young.—p. 1196.

Bactericidal Power of Blood.—After exposure to mustard gas by inhalation, subcutaneous injection and application to the skin, McCowen found the hemobactericidal power to increase; the more severe the exposure, the more pronounced this increase. A similar increase in the hemobactericidal power has been noted after the application of other tissue destroying substances such as hydrochloric acid, formic acid, and liquor epispasticus. No change in the hemobactericidal power is noted at the point of death after the injection of substances which do not produce tissue destruction. It is suggested that this increase of the hemobactericidal power is due to a considerable pouring out of the antibacterial elements from the leukocytes into the blood as the result of their disintegration. It would appear that there is some common factor at work; namely, the release of antibacterial elements from the leukocytes at the site of injury, influencing the bactericidal power of the blood.

Enormous Dilatation of Heart.—The greatest horizontal diameter of the heart of East's patient as it lay in the chest was about 10 inches (25.4 cm.). The pericardial sac was thickened. Its cavity was obliterated everywhere by adhesions. These were fairly fine over the left ventricle and could be separated, but over the right ventricle they were very dense. The right border of the heart, seen from the front, was formed by the left auricle, which projected well to the right from behind the right auricle. At the back the pericardial sac was adherent to the adjacent structures in the posterior mediastinum. In the area in relation to the back of the left auricle. it was densely adherent to the medial part of the right leaf of the diaphragm over an area about 3 inches square. The whole heart weighed 31½ ounces (893 Gm.). On the whole, the shape of the heart, excluding the left ventricle, was globular. The right auricle was much dilated and could hold about half a pint. The inferior vena cava at the point of its junction with the heart had an internal circumference of 3½ inches (9 cm.). The pulmonary artery had an internal circumference, just above the valves, of 3½ inches. The aorta was small; the whole tube from the beginning throughout the arch only admitted a fairly large finger comfortably. Its internal circumference just above the valves was 2¼ inches (5.5 cm.). The left auricle was enormously dilated. Its capacity was about 1½ pints.

Neoplasms of Mediastinum.—Two cases are reported by Young. The first is one of a secondary neoplasm of the mediastinum with an *Aspergillus* infection. The second case was one of a neoplasm of the mediastinum, possibly primary, but probably secondary, associated with tuberculosis of the lung. Both cases from the clinical point of view were fairly typical of intrathoracic neoplasms, and the results of the roentgenographic examination were greatly in favor of that, and the condition was confidently diagnosed prior to the reception of sputum reports.

Medical Journal of Australia, Sydney

1: 569-592 (May 22) 1926

Peptic Ulcer. C. F. Pitcher.—p. 569.
Roentgen-Ray Diagnosis of Duodenal Ulcer. H. A. McCoy.—p. 574.
Lipiodol Injections as Diagnostic Agent. J. F. Mackeddie.—p. 577.
Central Rupture of Perineum: Case. A. G. E. Naylor.—p. 579.
Odontome from Bullock. J. B. Cleland.—p 580.
*Unusual Case of Typhoid Fever. K. C. Ross.—p. 580.

1: 593 626 (May 29) 1926

Causes and Prevention of Maternal Morbidity and Mortality. H. Jacobs.—p. 593.

Negative Serology in Typhoid.—In Ross' case, at no time during the disease was any immunologic response evident as judged by repeated agglutination tests, but was regarded clinically as a case of typhoid and proved to be so at necropsy. Culture tubes were inoculated with blood, stools and urine taken during life, but no typhoid bacilli were grown; no reaction was obtained to the Widal test throughout the illness. Three hours after death, from the gallbladder, spleen and mesenteric lymph glands, there were cultured motile, gram-negative bacilli which did not ferment lactose, but yielded acid without gas in glucose and mannite and which were agglutinated with standard *Bacillus typhosus* (Penfold) to 1 in 8,000, but were not agglutinated in any dilution with serum for *Bacillus paratyphosus* A or B.

1: 627-658 (June 5) 1926

Maternal Morbidity and Mortality. H. Jacobs.—p. 627.
Case of Tetanus Neonatorum. M. J. Plomley.—p. 644.
Enchondromas of Larynx. J. J. Woodburn.—p. 645.

1: 659-688 (June 12) 1926

Workers' Compensation Act: Medicolegal Aspect as Applied to Insurance Companies. L. I. Skelton.—p. 659.
Medical Aspects of Workers' Compensation Act. J. Kennedy.—p. 661.
Infant Feeding. A. J. Turner.—p. 667.
Significance of Certain Pathologic Changes in Cerebrospinal Fluid. B. Corkill.—p. 672.
*Case of Striae Atrophicae. W. E. George.—p. 674.

Striae Atrophicae.—George relates the case of a girl, aged 17, who noticed "varicose veins" appearing over both buttocks. The skin affected was very tender, especially when she sat down or stooped, and there was continuous intense itching. The skin lesion has persisted, but there is now no pain, the only complaint being the presence of the lesions. The color of the marks varies; it is more noticeable after exertion or when she is menstruating. She has always been a delicate girl and always feels tired and languid. There is nothing of interest in the family history. On examination there were seen lines arranged symmetrically over the buttocks, resembling in appearance the striae gravidarum appearing on the abdomen of a woman in her first pregnancy. They had, however, a livid purplish color, not the pinkish color of striae gravidarum. They were distributed in parallel rows perpendicular to the direction of the lines of maximum tension of the skin when the patient leaned forward at the hips. The individual lines were irregular in outline and varied in length and were about 3 mm. wide. They commenced over the skin below the anterior superior iliac spines on each side and pursued an irregular course toward the folds of the buttocks. The arrangement was symmetrical. No definite cause for this condition could be found.

Practitioner, London

116: 389-440 (June) 1926

*Obstructive Jaundice. C. S. Wallace.—p. 389.
*Gallstones. R. P. Rowlands.—p. 394.
*Very Large Gallbladder. G. Robertson.—p. 400.
*Treatment of Exophthalmic Goiter. T. G. Moorhead.—p. 402.
Submaxillary Calculus. D. C. L. Fitzwilliams.—p. 411.
Frequency of Micturition in Infancy and Childhood. D. Paterson.—p. 418.
Diagnosis of Peptic Ulcer. C. Bull.—p. 422.

Gallbladder Drainage in Obstructive Jaundice.—When the surgeon is faced with a huge gallbladder and distended bile passages, Wallace asserts that great temporary relief and improvement of health can be produced by drainage of the gallbladder. External drainage is now abandoned, and it is only a question as to whether the gallbladder should be anastomosed to the stomach or the duodenum. It does not appear to matter which of these organs is selected for the opening as the discharge of bile into the stomach seems to produce no disturbance of digestion. The surgeon can choose the stomach or duodenum, according to which organ offers the easier operation.

Operations for Gallstones.—Rowlands stresses the point that operations for gallstones are very difficult and should not be undertaken lightly. Any one who undertakes this work should train himself thoroughly under a master. The main ideals are to do no harm and to remove all the stones, for they very rarely reform. Whenever possible, if the disease is limited to the gallbladder, especially in young persons, it is important to remove rather than to drain the gallbladder. If the cases are well chosen the mortality for cholecystectomy is less than that for cholecystostomy, and the after-results are infinitely better. It is important not to operate on the common duct during an acute attack of jaundice and especially of fever. It is much safer to wait for an interval and to prepare the patient adequately. Preliminary careful preparation, with injections of calcium chloride with plenty of water, and glucose by the rectum, adds greatly to the safety of the patient.

Enormously Distended Gallbladder.—Robertson's patient, aged 68, presented a large abdominal tumor occupying the right hypochondrium, right lumbar and part of the right iliac regions. Many joints showed rheumatoid arthritic changes. The diagnosis lay between a very much enlarged gallbladder and a hydronephrotic right kidney. At operation, the tumor proved to be a very large gallbladder distended to half the size of the adult head. The wall of the viscus was found to be nearly one-fourth inch thick. A large fistula, admitting two fingers, was found between the gallbladder and the second portion of the duodenum, near its junction with the first portion of the duodenum. The neck of the gallbladder embraced a very large, firmly impacted stone which weighed 2 ounces 30 grains (62 Gm.). The gallbladder was drained. The patient made an excellent recovery.

Medical Treatment of Exophthalmic Goiter.—Moorhead prefers medical to surgical treatment in these cases and asserts that thereby he can effect a cure in between 70 and 80 per cent of cases within six months. He orders rest in bed; an icebag is applied to the thyroid for at least two hours daily; a diet, largely vegetarian, is ordered; sedatives are given at night if required; very few visitors are allowed; bromide quinine, 5 grains (0.32 Gm.), three times daily, is given. Local septic foci are attended to, and intestinal stasis, if present, is got rid of by suitable means. Later, roentgenotherapy is given. By the end of six months from the beginning of treatment, the patient should be perfectly well.

Annales de Derm. et Syphiligraphie, Paris

7: 193-256 (April) 1926

*Lupus Erythematosus. J. Schaumann.—p. 193. C'cn.—p. 279.
Chancroidal Condyloma of the Vagina. Ravaut and Lambling.—p. 215.
"Occupational Melanoderma." A. Kissmeyer.—p. 224.
Benign Inguinal Lymphogranulomatosis. A. Kristjansen.—p. 227.
*Relations Between Syphilis and Cancer. V. C. Jonescu.—p. 231.

Pathogenesis of Lupus Erythematosus. — Schaumann's theory of lupus erythematosus is based on microscopic examination in three acute diffuse cases and eight chronic localized cases. He claims that the skin lesions are the reflection of a lymphogranulomatosis, which is a process of benign character. Under some still unknown influence it may exceptionally develop into a malignant, acute form. While the nonmalignant lymphogranulomatosis does not affect the general health and may subside, the acute form terminates in fatal septicemia. The granulomatous tissue is composed of epithelioid cells, besides the lymphoid and plasma cells. The lymphogranulomatosis of lupus erythematosus is closely analogous to tuberculous pseudoleukemia. The acute or malignant form may coexist with tuberculous lesions. Follicular tuberculosis may be the origin of the disease. The history of the patients frequently revealed tuberculosis. The outbreak of the granulomatous process induces, on the other hand, gradual retrogression of the tuberculous lesions, thus explaining their absence at necropsy. Erysipelas perstans of the face, as well as the skin manifestations of acute lupus erythematosus are probably induced by tuberculous toxins or by cell substances from the affected glands. Guinea-pigs inoculated with the gland tissue did not develop tuberculosis.

Relations Between Syphilis and Epithelioma.—Jonescu describes cases of cancer of the tongue, soft palate or vulva in three syphilitic persons. Since leukoplakia represents a horny papilloma, its degeneration into cancer, he says, may be easily explained. The interval between the syphilitic infection and the appearance of the cancer is long, but the course of the malignant process is rapid. Antisyphilitic treatment is of no avail; operation is the only indication.

7: 257-320 (May) 1926

Hemorrhagic Skin Syphilis. M. Favre.—p. 257.
*Ichthyol in Treatment of Furunculosis. A. Kissmeyer.—p. 297.
Tertiary Syphilis of the Face. D. Dupasquier.—p. 301.

Ichthyol in Treatment of Furunculosis.—Kissmeyer recommends ichthyol as a specific remedy for furunculosis. Each furuncle is first cleaned with alcohol or iodine and then covered with pure ichthyol. A thin layer of cotton is applied over the thick oil of the ichthyol, which soon dries, and the little dressing sticks like collodion. The next day the dressing is removed with tepid water, and the treatment repeated. If suppuration is profuse, the dressings are renewed twice a day. One or two applications induce considerable improvement. A nonperforated furuncle may disappear in a few days. Large furuncles should not be incised, but be treated simultaneously with the galvanocautery and ichthyol.

Archives de Médecine des Enfants, Paris

29: 249-312 (May) 1926

Postencephalitic Mental Perversions. G. Heuyer.—p. 249.
An Epidemic Eruptive Disease of Undetermined Nature. Stroë.—p. 255.
Case of Tay-Sachs Disease. C. Tretiakoff and A. Pujol, Jr.—p. 267.
Opsomyoclonic Syndrome with Encephalitis. W. Mikulowski.—p 279.
Poisoning with Cream Cakes. J. Comby.—p. 285.

29: 313-376 (June) 1926

Flocculation Test in Atrophic Conditions. Svehla and Saitz.—p. 313.
Primary Acute Orchitis in Children. E. Olry.—p. 329.
*Von Jaksch-Luzet's Anemia. R. Roelofs.—p. 341.

Pseudoleukemic Anemia Not Absolutely Fatal in Children.—Roelofs thinks, contrary to Beretervide and Bianchi, that the von Jaksch-Luzet anemia is not always fatal in infants. Certain constitutional anomalies, defective hygiene or alimentation, especially the prolonged use of goat's milk, also infections are the main causes of the disease. Of his seventeen typical cases and in forty-nine with a less complete clinical picture, goat's milk seemed to be responsible for the disease in three in the first group and in twelve of the others. There were no signs of syphilis or tuberculosis. There were two deaths in the first group and eight among the others. The pseudoleukemic anemia may be associated with rickets, the two being probably entailed by the same etiologic factors. Enlargement of the spleen and liver, hypertrophy of the glands, fever and gastro-intestinal disturbances may be among the symptoms of the anemia. The blood picture is characteristic. The treatment consisted in appropriate feeding, including vegetables and fruits, cod liver oil plus phosphorus, iron and ultraviolet rays. Arsenicals were not used. Seven cases of the pronounced type are described in detail to show the prompt recovery under these measures.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 915-954 (June 4) 1926

Gas Embolism. L. Binet.—p. 915.
Treatment of Syphilitic Anemia. C. Flandin.—p. 917.
A Hemoglobinometer That Records by Weight. E. Peyre.—p. 920.
Stramonium in Treatment of Parkinsonian Syndrome. Laignel-Lavastine and Valence.—p. 921.
Hypertension and Fibrous Nephritis. Renaud and Roland.—p. 924.
*Perforation in Artificial Pneumothorax. Tobé and Terrasse.—p. 928.
*Afebrile and Chronic Miliary Tuberculosis. E. Rist et al.—p. 934.
Tuberculin Reaction in Adults. A. Jousset.—p. 944.
*Tuberculosis in Syphilis. L. Laederich and R. Weil-Spire.—p. 949.
Diabetes with Tuberculosis. Sklodowsky and Konopnicki.—p. 952.

Perforation of the Lung in the Course of Artificial Pneumothorax.—Tobé and Terrasse report two cases of perforation of the lung occurring after the first insufflation for unilateral pneumothorax. Roentgenograms showed a fistula between the cortical part of the lung and the pleura. In one case the clinical picture resembled a spontaneous pneumothorax, in the other the perforation was not detected before the roentgenray examination. The lung perforation did not interfere with the results of the artificial pneumothorax. The fistula healed spontaneously in both cases as well as in four of Burnand's five. Asphyxia from perforation of the lung with induced bilateral pneumothorax may be averted by elective restriction of the first pneumothorax to a limited area. This leaves as large a field as possible for the normal functioning of the first collapsed lung.

Miliary Tuberculosis Without Fever or with a Chronic Course.—Rist, Rolland, Jacob and Hautefeuille describe one of their cases of acute miliary tuberculosis which developed within six months without fever or loss of weight. Although the clinical signs were insignificant, repeated roentgenograms indicated spreading of the morbid process, terminating in tuberculous meningitis. Histologic examination of the lung revealed association of tuberculous granulations with miliary tubercles. They report also two other cases of chronic miliary tuberculosis of the lung, with clinical recovery after one and two years. Roentgenologic examination apparently confirmed the disappearance of all anatomic changes.

Galloping Tuberculosis in the Course of Recent Syphilis.—Laederich and Weil-Spire refer to a case of acute tuberculosis in a young woman with syphilis acquired eight months before. The tuberculous lesions became highly destructive within four weeks terminating fatally in the sixth week. They have found only five instances on record of tuberculosis with such a rapid course in subjects with recent syphilitic infection.

Journal de Chirurgie, Paris

27: 385-528 (April) 1926

*Adenomyoma in Rectovaginal Space. L. Michon and H. Comte.—p. 385.

Adenomyoma of Rectovaginal Space.—Michon and Comte discuss the pathogenesis and describe the macroscopic and histologic lesions in fifteen cases of adenomyoma in the rectovaginal space, at Lyons. The first appreciable manifestation was induration in the posterior vaginal wall. This developed into a tumor, which at first occupied the space between the cervix, rectum and vagina; but later encroached on a part or even the whole of the small pelvis. Intolerable dysmenorrhea is one of the chief symptoms. It is associated with a sensation of heaviness in the rectum, anus or perineum, becoming exaggerated into severe pain at defecation. The atrocious "menstrual rectalgia" is pathognomonic; it is sometimes accompanied with vesical tenesmus. Another important symptom is profuse menorrhagia, from the hyperplasia of the adjacent mucosa. Palpation through the rectum confirms the diagnosis. The small adenomyoma may be removed by way of the vagina or abdomen. A large tumor may require a total hysterectomy. Cullen's operation is preferable in case of rectal adhesions. They tabulate further the details of 101 other cases from the literature bringing the total to 116. They explain that the typical adenoma is a miniature uterus. The danger of recurrence discourages conservative intervention in the advanced cases. Radiotherapy failed in the one known case in which it was used.

Journal de Radiologie et d'Electrologie, Paris

10: 145-192 (April) 1926

Roentgen Rays of Different Wave Lengths. Doguon.—p. 145. C'cn.—p. 210.
*Cancer of Uterine Cervix. H. Coutard and C. Regaud.—p. 152.
Choice of International Roentgen-Ray Unit. I. Solomon.—p. 155.
Gamma Radiation of Radium. M. Mazerès.—p. 159.
Radiologic Diagnosis of Gas Cysts. Bonnamour et al.—p. 164.
Calcified Cyst in Liver with Lung Cyst. Petzetakis and Yaloussis.—p. 169.
Radiography of the Ovary. Ducuing et al.—p. 172.
Apparatus for Radiography of Sinuses of the Face. Porcher.—p. 175.

10: 193-240 (May) 1926

Elasticity and Tone of the Stomach. A. Jaubert de Beaujeu.—p. 193.
Electric Resistance of the Skin. L. Neu.—p. 219.
Paralysis of Vocal Cord. M. Rabbinowitz.—p. 224.

Results and Technic of Roentgenotherapy for Cancer of the Uterine Cervix.—Coutard and Regaud report the results in two patients after hysterectomy and in twenty-nine inoperable cases. One of the women after the operation was exposed to the roentgen rays for glandular metastases in the pelvis. The recovery persists up to five years to date. In the inoperable patients, cancer of the cervix was accompanied with malignant infiltration of the parametrium, on one or both sides. In 28 per cent, the clinical recovery has persisted for from two to five years; the others were greatly improved. Among nine patients treated exclusively with roentgen rays, recovery was noted in 44.4 per cent. The roentgen rays, followed by radium treatment, induced recovery in 33.3 per cent of ten patients. None of the ten other patients were cured who had been treated with roentgen rays after the failure of radium. In order to avoid local reactions, the surface exposed was divided into several fields, each receiving a small dose of the rays. No general reactions were observed with this method. The total dose for a half of the pelvis was about 60 Holzknecht units, given in twenty-five days. No more than 4 or 5 units were given in a day. The total number of treatment hours was from twenty-five to fifty-five.

Presse Médicale, Paris

34: 753-768 (June 16) 1926

*Ultraviolet Rays in Tuberculosis. M. Villaret et al.—p. 753.
Intravenous Phenolsulphonphthalein Test of Kidney Function. M. Hélouin.—p. 755.
Radiology of Pleural Adhesions. A. Bernou.—p. 757.

Irradiated Oil in Local and General Treatment of Tuberculosis.—Villaret, Justin-Besançon and Fauvert mixed 6 Gm. of cholesterol with 1,000 Gm. of oil (artificially enriched and made unsaponifiable), and exposed the mixture to the ultraviolet rays for half an hour or an hour. The special properties acquired by the oil from this irradiation were retained for at least a year and a half. From 10 to 20 cc. of the irradiated oil was injected in pleurisy with effusion, then the effusion was aspirated, and up to 500 cc. of the oil injected. This indirect local actinotherapy seemed encouraging also in profuse effusions following induced pneumothorax, and in purulent tuberculous pleurisy. For general treatment of pulmonary tuberculosis, cholesterol, treated with ultraviolet rays from twenty minutes to two hours, was used alone. A teaspoonful was given by the mouth, once a day. This was combined with calcium salts. The treatment never induced fever, or any complications in the digestive tract. Improvement of appetite and increase in weight were the immediate results. Ingestion of the irradiated cholesterol was well tolerated by the tuberculous, even those with fever, while the contrary is observed under direct application of ultraviolet rays.

34: 769-784 (June 19) 1926

B. C. G. Vaccine in Prevention of Tuberculosis. G. Poix.—p. 769.
*Arsenicals in Treatment of Marasmus. Bodin and Chevrel.—p. 771.
Pseudobulbar Dementia from Syphilis. Foix and Chavany.—p. 772.

Treatment of Marasmus with Arsenicals.—Bodin and Chevrel treated eight infants with marasmus by subcutaneous injections of an arsenical preparation. The injections were given three or four days apart. Gain of weight with improvement of general condition was noted in seven infants. This usually occurred after one series of injections. The efficacy of the treatment may possibly be explained by the fact that congenital syphilis is a frequent factor in marasmus.

34: 785-800 (June 23) 1926

*Paraplegia with Pott's Disease. Sorrel and Sorrel-Dejerine.—p. 785.
Chronic Inflammation of Colon and Cecum. Faroy and Baumann.—p. 789.
Transdiaphragmatic Hernia. P. Z. Rhéaume.—p. 791.

The Three Clinical and Anatomic Types of Paraplegia from Tuberculous Spondylitis.—Sorrel and Sorrel-Dejerine distinguish three forms of paraplegia from Pott's disease. Two forms are curable, one incurable. The curable paraplegia may be transient and disappear in a few weeks or months, or it may persist for one and a half or two years. The briefly transient form is of rare occurrence. The curable forms appear at an early stage of tuberculous spondylitis; the development of the paraplegia is rapid and complete. The clinical picture seems to be grave. Nevertheless, the paralysis disappears, without any sequelae. The incurable paraplegia is a tardy complication; it develops slowly; the sensibility and sphincters are not affected in the beginning. The curable forms are observed in adults as well as in children. They are induced by intraspinal abscesses, while the incurable form is due to external pachymeningitis. It is probable that the briefly transient form is caused by edema of the dura mater, not yet accompanied by abscess. Paradoxically, the prognosis is graver in paraplegia starting with a mild clinical picture than in that with severe manifestations.

Revue de Chirurgie, Paris

63: 63-118, 1926

Traumatic Pancreatic Fistula. R. Courboulès.—p. 63.
*Periarterial Sympathectomy in Bone Fractures. R. Fontaine.—p. 95.
Treatment of Old Dislocation of the Patella. P. Mallet-Guy and J. Rollet.—p. 105.

Periarterial Sympathectomy to Promote Healing of Fractures.—Fontaine applied periarterial sympathectomy to the brachial artery in two cases and to the femoral in six—all with defective consolidation of fractured bones. Complete healing with restoration of function occurred in about six weeks; in one not until the tenth month. The intervention failed in three cases with complicating suppuration or pseudarthrosis. The results were confirmed experimentally. Bilateral fracture of the metatarsus was produced in two dogs, and of the tibia in a third; then periarterial sympathectomy was made on one side. Consolidation occurred much more rapidly on the operated side. The active vasodilatation, entailed by the sympathectomy, evidently promotes the process of consolidation.

Pediatria, Naples

34: 569-624 (June 1) 1926

Biotypes in Pediatrics. S. Maggiore.—p. 569.
Epidemic Meningitis in Children. C. Gallo.—p. 578.
Sedimentation Test in Congenital Syphilis. C. Giaume.—p. 592.
Gangrenous Ecthyma. A. Versari.—p. 600.
Atonic Cerebral Paralysis. A. De Capite.—p. 609.

Anales de la Facultad de Medicina, Montevideo

10: 949-1024 (Dec.) 1925

Aspiration Treatment of Fistulas into Stomach and Duodenum. C. Nario.—p. 949.
Early Diagnosis of Congenital Syphilis. R. Berro.—p. 975.
*Cancer of the Lip. Carlos Butler.—p. 985.
*Lambliasis. J. Carrere.—p. 999.

Cancer of the Lip.—Butler analyzes 173 cases of cancer of the lip and eighteen of precancer conditions. In the 159 cases involving the lower lip, seventy-seven were smokers and fifty-one *maté* users. The total 191 cases included 8.8 per cent women; in 23.2 per cent the lesion was a postoperative recurrence. Under radium treatment, 60.3 per cent were clinically cured and only 10 per cent showed no improvement, in the lower lip cases, while 81.81 per cent were cured and 18.19 per cent improved in the upper lip cases. A special device for fastening the radium tube to the lip is illustrated.

Intestinal Lambliasis.—The two cases described by Carrere illustrate the wide diversity in the clinical pictures from these parasites. In one there were merely nausea, meteorism and constipation; in the other, pain after meals, vomiting, intestinal pains, diarrhea and melena. The parasite seemed to be restricted to the duodenum and below; the biliary apparatus showed no signs of it. Great improvement followed the use of an arsphenamine preparation.

Archivos Españoles de Pediatría, Madrid

10: 193-256 (April) 1926

International Standardization of Arrangements to Allow Breast Nursing During Factory Hours. E. Suñer Ordóñez.—p. 195.
Influence of Summer Heat on Infants. J. Bravo y Frias.—p. 199.
Prophylaxis of Infection in Infants. A. Romeo Lozano.—p. 209.
Prophylaxis of Tuberculosis in Children. J. Garcia del Diestro.—p. 225.
*Chart for Child Welfare Work. C. Sainz de los Terreros.—p. 237.
Social Import of Fight Against Congenital Syphilis. Herrera.—p. 243.
The Fight Against Tuberculosis in School Age. R. Garelly.—p. 247.
Resolutions Adopted at Tenth International Child Welfare Congress, Madrid, 1926.—p. 252.

Records for Child Welfare Work.—Sainz de los Terreros expatiates on the advantages of using a standard chart for the record in individual cases, which would allow comparison of the data between different institutions and countries. He publishes a model chart for infants and young children in the home and in institutions. It has lines for thirty-four specifications as to the different biologic, pathologic and laboratory data, etc., from the child and the parents.

10: 257-320 (May) 1926

*Arsenical Polyneuritis in Children. L. Morquio.—p. 257.
Medical Inspection of Schools. G. Sáinz de los Terreros.—p. 287.
Atresia of Half of Nose. V. Juaristi.—p. 299.
Supracondylar Exostoses. V. Juaristi.—p. 301.

Arsenical Polyneuritis in Children.—Morquio relates that nine children in two families presented symptoms of poisoning from accidental contamination of the food at one meal with arsenic, or chronic poisoning from the water being kept in a barrel previously used for washing hides. The arsenical paralysis and pains affected the extremities alone, and were symmetrical. A characteristic false Kernig sign, the children being unable to sit up with the legs extended, suggested meningitis, but the cerebrospinal fluid was normal. In the water cases, the parents and an aunt were also affected, and the father died. Melanoderma was intense in the acute poisoning cases; gastro-intestinal symptoms had predominated at first. The children were all in the hospital eight or nine months, and all recovered apparently completely under iodide and electric treatment, massage and hot baths.

Archivos Latino-Amer. de Pediatría, Buenos Aires

20: 145-198 (March) 1926

Welfare Work for Infants. J. Damianovich.—p. 145.
*Congenital Laryngeal Stridor. M. Pacheco.—p. 157.
*Diagnostic Import of Craniotabes. S. E. Burghi.—p. 164.
Teaching of Hygiene to School Children in Argentina. Olivieri.—p. 182.

Congenital Laryngeal Stridor.—Pacheco states that malformation of the epiglottis was responsible for the loud crowing inspiration in the two young infants, aged 2 and nearly 5 months. Noted soon after birth and intermittent at first, it soon became continuous. There was no dyspnea or cyanosis and the Wassermann and tuberculin tests were negative. The stridor ceased during sleep in the girl infant and was much attenuated in the boy. The expiration sound was normal, and it is expected that the child will outgrow the anomaly in its second year, as in most of the similar congenital cases on record.

Diagnostic Significance of Craniotabes.—Burghi relates that the proportion of instances of craniotabes among 1,231 infants examined for it was 5.04 per cent. (Comby and others have found a much larger percentage, up to 35 or 46.6.) Of the sixty-two thus affected, fifty-eight presented various manifestations suggesting probable congenital syphilis, and only four seemed to be free from a syphilitic taint. Among thirty-six given the Wassermann test, it was positive in 8.36 per cent of the mothers, and 33.32 per cent of the infants. In thirty-two there was splenomegaly or coryza or both.

Boletin del Inst. de Clín. Quirúrgica, Buenos Aires

1: 253-285 (Dec.) 1925

*Subtotal Rhinoplasty. O. Ivanissevich.—p. 253.
*Stain for Nerves of Iris. M. Balado.—p. 257.
*Treatment of Infection of the Fingers. Arce and Squirru.—p. 262.
*The Botelho Reaction. S. Mazza.—p. 264.
*External Cancer. J. Arce et al.—p. 269.

Subtotal Reconstruction of the Nose.—Ivanissevich gives twenty-two serial illustrations of the results obtained with the Argentine method of rhinoplasty in a young man who had lost the lower part of the nose, down to the bone, from leishmaniasis. The pedunculated skin flap was taken from the forearm.

Stain for the Iris Nerves.—Balado describes a modification and combination of the Alfieri and Spillmeyer staining methods with which it is possible to stain the nerves in frozen sections of the iris in mammals. The sclera has to be removed.

"Lid" Resection for Cellulitis of the Fingers.—Arce and Squirru treat paronychia, especially with tendon-sheath involvement, by cutting away the soft parts over it, thus exposing it completely, down to sound tissue, to allow perfect drainage. The portions resected are oval, with bridges between as shown in an illustration. They call it the "lid" method, as the lid is taken off from over the process. The cellular tissue in the depths is resected even more generously than the skin. They irrigate with surgical solution of chlorinated soda every two hours after the resection, and when the dressings are changed have the whole hand placed in a hot much diluted solution of formaldehyde for ten or fifteen minutes. In twelve cases described, the patients were dismissed in from six to twelve days.

The Botelho Test.—Mazza applied this test to 153 serums: the reaction was positive in 60 per cent of the fifteen cancer cases, in 61.5 per cent of thirteen pregnant women, in 50 per cent of four echinococcosis cases, and in seven of fifty-five syphilitics. In twenty-one other noncancer cases the reaction was positive in twelve.

Rational Treatment of External Cancer.—Arce, Squirru and Nicolini relate that 100 of a series of 263 cancer patients were treated with radium, and that twenty-one of the fifty-nine skin cancers have been cured for four years to date, as also thirteen of the twenty-seven lip cancers, and one of the three mammary cancers. Thirty-two photographs accompany the article. Recurrence or aggravation was observed in twelve cases, and three of the patients have died since. In one of the sixty-five mammary cancer cases a complete cure was realized with electrocoagulation; three of the women have died of the fifty-four treated by mammectomy.

Boletin de la Soc. de Cirurgía de Chile, Santiago

4: 1-18 (April) 1926

*Transplantation of the Ovary. *Hugo Grove.*—p. 1.
Consolidation of Fracture Promoted by a Periarterial Sympathectomy. H. Grove.—p. 4.
Total Colectomy in Three Sittings. H. Grove.—p. 6.
Reconstruction of Biliary Ducts. *J. Arnello.*—p. 8.
Calculus in Common Bile Duct; Buried Drain. *Id.*—p. 10.
Case of Chorco-Epithelioma. A. Fuentealba.—p. 12.
*Treatment of Mercurial Poisoning. Recovery. Rudecindo de la Fuente.—p. 14.
Successful Förster Operation in Little's Disease. Johow.—p. 16.

Implanting the Ovary in the Uterus.—Grove has applied in several cases Tuffier's technic for transplanting the ovary. The indications for it were bilateral suppurating adnexitis rebellious to medical measures in three cases, bilateral pyosalpinx in two, and one case of left pyosalpinx with ruptured right tubal pregnancy. The ovary is implanted with its head inside the uterus, its cervix in the uterine wall. In the first three cases menstruation continued apparently undisturbed. The others are quite recent cases. His experience has demonstrated that too much of the ovary must not be allowed to protrude, as otherwise it may act like a polyp; on the other hand, it must protrude far enough for the ovum to fall into the cavity of the uterus. In three of his cases he had to prepare the ovary by evacuating a cyst or abscess. Preliminary dilation of the uterine cervix is not necessary as it can be dilated during the operation.

Blocking the Splanchnic Nerves in Treatment of Anuria from Mercurial Poisoning.—The young woman had had anuria for two days and was delirious. The relief from bilateral injection of procaine to block the splanchnic nerves was prompt; the pains were relieved, the delirium subsided, and in two hours 50 Gm. of fetid urine was voided, and up to 400 Gm. by the second day with recovery. The oxycyanide was the mercurial salt involved.

Boletin de la Soc. de Obstet. y Ginec., Buenos Aires

5: 25 62 (May 18) 1926

"Embryotomy with Living Fetus." Zarate.—p. 37.
Pregnancy Pernicious Anemia. R. Bustos Morón.—p. 42.
*Vagina Made from Intestine. J. Iribarne and Contreras Ortiz.—p. 51.

Vagina Made from Loop of Intestine.—Iribarne and Contreras Ortiz report the successful application of the Baldwin-Mori technic in a case of aplasia of uterus and vagina in a young married woman. The left (rudimentary) tube and apparently normal left ovary were the only representatives of the sex organs. They applied the Baldwin-Mori technic with complete success, and state that this is the seventy-eighth operation for construction of a vagina on record. It brings the death rate down from 11.4 to 11.2 per cent. The technic and results are illustrated, with three colored plates.

Brazil-Medico, Rio de Janeiro

1: 201-212 (April 10) 1926

Treatment of Leishmaniasis of Mucous Membranes. J. de Aguiar Pupo.—p. 201.
Vaccine Treatment in Case of Iritis. E. Campos.—p. 204.

1: 227-238 (April 24) 1926

*Acute Generalized Peritonitis. Americo Valerio.—p. 227.
Case of Silent Iritis. E. Campos.—p. 230.

Treatment of Acute Diffuse Peritonitis.—Valerio operates at once; an occasional unnecessary laparotomy is much better than to let even one case get beyond control. The old death rate of 80 to 95 per cent has been transformed in the last fifteen years to recovery in 80 to 90 per cent. The main thing is to discover and remove the cause, irrigating and draining the peritoneum. He warns against draining in gastro-intestinal operations as this is liable to entail interminable fistulas. In appendicitis and adnexitis, he drains the pouch of Douglas as a routine measure. Fowler's position should be enforced in every case of peritonitis. An abundant supply of a solution of saccharose or glucose should be provided, avoiding physiologic sodium chloride solution, as this blocks the kidneys. Camphorated oil is also useful, 10 cc. daily, given cautiously. Autohemotherapy and antitetanus serum should also be considered. In case of postoperative dilatation of the stomach, the stomach should be rinsed out, never using more than 200 or 300 cc. for the purpose.

Prensa Médica Argentina, Buenos Aires

12: 1053-1088 (April 10) 1926

The Arterial Circulation in the Impulse-Conducting Apparatus in the Heart. E. Géraudel.—p. 1053.
Krukenberg Tumors. A. G. Neumann.—p. 1067.
*Syphilis of the Circulatory Apparatus. J. L. Carrera.—p. 1069.
The Social Function of the University. L. La Porta.—p. 1073.

Syphilis of the Heart and Vessels.—Carrera has dropped mercury completely in treatment of syphilitic disease of the circulatory apparatus, as it is liable to block the kidneys. He graduates the doses of neo-arsphenamine according to the tolerance, beginning with 0.05 Gm., repeating in three days. In angina pectoris he does not go above 0.3 Gm. twice a week, and with aneurysm of the aorta, he gives 0.15 Gm. three times a week. He thus reaches a total of 6, 8 or 10 Gm. in a series, and then suspends it for twenty to twenty-five days, possibly alternating with iodide. In twenty-five cases of myocarditis, the improvement was notable. The only danger is that the series may be interrupted before enough of the drug has been given. In one patient with aortitis and weak heart, decompensation improved under treatment for a year with neo-arsphenamine (total, 20 Gm. during the year). He then abandoned treatment, but returned a year later with symptoms suggesting recurrence of the previous condition, and died suddenly three days later. In three of Carrera's ninety cases of aortitis there were symptoms of angina pectoris, which subsided entirely, and all were materially improved. Bismuth treatment, exclusively, failed completely. He supplements the specific treatment with restriction of salt in the diet, theobromine or other diuretics, and nitroglycerin or benzyl benzoate as indicated. He has given iodide by the vein in hundreds of cases with good results.

12: 1145-1172 (May 10) 1926

*The Hilum Dance. M. Miranda Gallino.—p. 1145.
*Berberin with Quinine in Malaria. C. P. Waldorp.—p. 1147.
Pregnancy Pernicious Anemia. R. Bustos Morón.—p. 1148.
*Postarsphenamine Eruption and Stomatitis. J. L. Carrera.—p. 1162.
Toxicity of Tumor Extracts in Relation to Protein Content. A. H. Roffo and R. López Ramirez.—p. 1164.

The Hilum Dance.—Miranda Gallino quotes this term to express the expansive pulsation in the hilum of the lungs during the systole of the ventricle, the shadow growing small again during the diastole. It does not seem to be pathognomonic of any special pathologic condition as it has been observed with various forms of heart disease. It is a sign of permanent hypertension in the lesser circulation. It was pronounced in a man with sclerosis and ectasia of the pulmonary artery and generalized arteriosclerosis, but no other circulatory derangement.

Treatment of Chronic Malaria.—Waldorp reports excellent results in a number of cases of chronic malaria in which berberin was associated with the quinine. He gave adults up to eight or ten 0.20 Gm. tablets of berberin sulphate daily. This brings on attacks of the malaria, transforming a simple tertian or quartan form into a double or triple form. Then, in the midst of an attack, he makes an intramuscular injection of 0.25 Gm. of quinidine sulphate in solution, repeating this daily for ten days, or giving 0.30 Gm. tablets of quinidine twice a day. By this combined treatment he has succeeded in curing apparently stubborn cases.

Rash and Stomatitis from Arsphenamine.—Carrera reports that a young woman, aged 18, with a three plus Wassermann reaction and signs of congenital syphilis, had been given mild mercurial treatment a year before. As severe headaches persisted, he gave a course of neo-arsphenamine, beginning cautiously, reaching a total of 4.5 Gm. Then a severe eruption developed, accompanied by intense stomatitis and gingivitis, enormous edema of the tongue and inside of the cheeks, and ulcerations. A laryngologist consulted assumed that the lesions were due to syphilis, and began treatment with arsphenamine. If this had been continued, serious results might have been entailed. Under internal treatment with epinephrine and local application of hydrogen peroxide creams, the morbid conditions slowly subsided by the end of the second month.

Revista de Cirugía, Buenos Aires

5: 97-144 (March) 1926

Flail Joints and Snapping Joints. R. Lozano.—p. 97.
Surgical Anatomy of and Above the Groin. Avelino Gutiérrez.—p. 111.
Blood Cysts in the Liver. P. Jáuregui and Etchegorry.—p. 127.
*Anomalies in Cervical Sympathetic. A. Pavlowsky.—p. 139.

Anatomic Anomalies in the Sympathetic Nerve in the Neck and Thorax.—Pavlowsky gives twenty-five illustrations of the anomalies found in dissection of fifty cadavers on which the Jonnesco operation of cervical sympathectomy was being studied. In one case the pneumogastric was blended with the left superior cervical ganglion, and could not be separated from it, the nerve fibers being actually crossed. The ganglion was no larger than normal, and the pneumogastric above and below seemed normal. In another case the inferior cervical ganglion forked to encircle the vertebral artery as in a ring. The superior thoracic ganglion was often adherent to the pleura.

Revista Médica Latino-Americana, Buenos Aires

11: 963-1104 (March) 1926

*The Functions of the Spleen. F. L. Soler.—p. 963.
Bilateral Purulent Pleurisy with Phlegmon in Thigh. Donovan.—p. 986.
Liver Disturbances with Asthenic Ptosis. Barilari and Cifone.—p. 990.
The Electric Discharge in the Air. J. C. Landaburu.—p. 993.
*Function Tests of the Kidney. J. J. Gazzolo.—p. 1006.
Industrial Accidents and Occupational Diseases. L. Bard.—p. 1024.

The Functions of the Spleen.—Soler recalls that as substances in the body have to be dissolved before they can be utilized, the formed elements of the blood that have outlived their usefulness or are defective from any cause have to be brought together at some point where they can be acted on by ferments or other agents to prepare them to be dissolved. The spleen is the organ where they are thus accumulated. It retains them for a time, giving the ferments a chance to act on them en masse. Then the spleen contracts, and this expels them, but by this time they are ready for speedy disintegration, and this is accomplished in the liver. Like the stomach, the spleen gives the formed elements of its contents a chance to accumulate and be vigorously acted on, and then passes them along. When the intrasplenic digestion is unable to proceed normally, the blood corpuscles and bacteria pile up in the spleen and it is unable to expel them properly (malaria), or else the spleen passes them on too soon (septicemia). For this function of accumulating, digesting and expelling the unfit corpuscles, he has coined the term sisoresis, and presents evidence to show that this main function of the spleen is highly selective, and not mere filtration.

Tests of Kidney Function.—Gazzolo emphasizes the importance of applying several tests and not relying on study of the urine or on any one test alone. The Ambard coefficient generally harmonizes with the results of the phenolsulphonphthalein test. Spurr advocates leaving the two ureter catheters in place for two hours for the diuresis test (drinking 600 cc. of water or mild diuretic tea, fasting). The defectively functioning kidney will not excrete as much urine as its mate. He injects a stain for a further test, and insists on the necessity for determining any abnormal proportion of chloride or nitrogen in the blood. Pagliere prefers to inject the indigo carmine intramuscularly for chromocystoscopy.

Revista de Medicina y Cirugía, Havana

31: 175-218 (March 25) 1926

Successful Subcutaneous Symphysiotomy with Breech Presentation. S. Garcia Marruz.—p. 175.
*Intrahepatic Lithiasis. Elpidio Stincer.—p. 190.
Vital Statistics of Havana in 1925. Jorge Le-Roy y Cassá.—p. 193.

Calculi in the Liver.—Elpidio Stincer describes the case of a woman who for four months had been having gastric disturbances, accompanied after a time with acute pain in the right hypochondrium and finally rigors and fever with sweating crises. The liver was very large, tender, and adherent to the abdominal wall. A deep incision released a large amount of pus and innumerable calculi while the gallbladder and biliary ducts showed no signs of cholelithiasis. It was exclusively intrahepatic, and there had been no jaundice. The woman succumbed two weeks later to heart failure. The roentgenograms had shown merely the enlargement of the liver, with no signs of the calculi.

31: 219-250 (April 10) 1926

Campaign Against Typhoid at Matanzas in 1926. Chalons.—p. 219.
*Avitaminosis in Tadpoles. W. H. Hoffmann.—p. 237.

Avitaminosis in Frogs.—Hoffmann relates that the tadpoles of *Hyla septentrionalis* fed exclusively with bread developed a disease resembling beriberi, and died before the stage of metamorphosis was reached. This experience was repeated in eight or ten sets of fifty specimens. In the latest group all had died but five, when he altered the conditions for them, providing them with fresh water every two or three hours, and not allowing any bread during the night. These five tadpoles lost all the acute symptoms of beriberi, and grew to be four or five times the normal size, and the tadpole phase persisted for 115 to 198 days, instead of the normal fifteen or sixteen days. They then died, probably from some unintentional neglect. These tadpoles did not rise to the surface to breathe for an hour or two after the arrival of the fresh water. The enormous surface area of the tail allowed ample respiration through the skin. Hundreds of tadpoles have died under his observation when the water was not changed often enough. Rotting substances probably exhaust the oxygen in the water. When the tail is cast, the animal has to breathe through its lungs, and it comes out of the water. He suggests that the tadpole tail may be found useful in study of respiration through the skin. The experimental lengthening of the larval stage suggests that science may prolong human life in this way.

Revista Soc. Arg. de Nipiol. y Pediat., Buenos Aires

1: 145-324 (Nov.) 1925. Centeno Memorial Number

*Liver Abscess in Children. J. C. Navarro.—p. 153.
Which Children Profit by Open-Air Schools. Garrahan.—p. 158.
*Suppuration in Iliac Glands in Children. C. Lugones.—p. 170.
Experiences with Immediate Separation of the New-Born from Tuberculous Mother. De Elizalde.—p. 175.
Neuropsychic Development and the Endocrines. J. Busco.—p. 183.
*Patent Botallo's Duct. De Elizalde and Beretervide.—p. 199.
Multiple Diphtheric Paralysis. S. Madrid Páez.—p. 213.
Scurvy in Children. Mamerto Acuña.—p. 219.
Infectious Diseases in Foundlings' Asylum. Naveiro.—p. 241.
*Treatment of Diphtheric Paralysis. Larguia and Del Carril.—p. 250.
Erythema Nodosum and Tuberculosis. G. Aráoz Alfaro.—p. 272.
Recklinghausen's Disease. J. Llambias.—p. 292.
Home Medical Inspection of Infants of Wetnurses. J. Paz.—p. 296.
*Anthrax in New-Born Infant. C. Ginepro.—p. 300.
Treatment of Birth Separation of the Epiphysis of the Humerus. J. M. Jorge.—p. 304.
*Diagnostic Import of Hemiplegia in Extension. J. M. Obarrio.—p. 311.

Abscess in the Liver in Children.—This is the fifth case of this kind that has been published by Navarro. In the others the abscess was traced to colitis, amebiasis or furunculosis, but in this case the boy, aged 12, had acute necrotic appendicitis with a purpuric syndrome. Necropsy revealed that the appendix had not perforated.

Suppuration in Iliac Lymphatic Glands in Children.—Lugones has recently encountered suppurating adenitis in the iliac region in three children, aged 9 months, 3 and 12 years. The insidious and torpid onset and course had suggested sarcoma of the pelvis. Puncture evacuated 147, 200 and 300 Gm. of thick, nonodorous pus, and after draining for five to twelve days the recovery was complete. One of the children required appendectomy four months later, but the peritoneum seemed to be intact, with no signs of preceding infection although the middle iliac gland was larger and harder than normal as a result of its former suppuration.

Persistence of Ductus Arteriosus.—In an infant, aged 14 months, as pneumonia subsided, the symptoms indicated that Botallo's duct was patent. The clinical study of the case is compared with the conditions found at necropsy, especially the dilatation of the ascending aorta.

Postdiphtheric Paralysis.—Under large doses of antitoxin, the paralysis in and following diphtheria yielded in the fourteen cases described. Some required up to eleven injections, the amounts ranging from 4,500 to 10,000 units. In a few the paralysis subsided in three or four days, under the 10,000 unit doses. The paralysis of the velum is a good criterion of the state of the paralysis. When fluids in the mouth cease to run out of the nose, the paralysis may be regarded as practically conquered. Two of the children succumbed to myocarditis after the paralysis had subsided.

Anthrax in New-Born Infant.—The anthrax bacillus was found in the heart blood of an infant a week after birth and six days after the death of the mother from anthrax. The infant had not presented any special symptoms.

Hemiplegia as Sign of Intracranial Hypertension.—Obarrio found distension of the lateral ventricle from circumscribed hydrocephalus as the cause of hemiplegia in extension in two young children. Obstruction of the foramen of Monro readily explains the hemiplegia. In one child, the hemiplegia subsided the moment the lateral ventricle was opened. In the second child, the diagnosis was confirmed by necropsy.

Santa Fé Médico

1: 227-287 (April) 1926

- *Carbohydrate Metabolism in Suprarenal Insufficiency. Pico Estrada.—p. 227.
- Tuberculoma of Cerebral Peduncle. Luque and Ferraris.—p. 234.
- Untoward By-Effects with Arsenicals. E. Fidanza.—p. 241.
- The First Census of Infants. P. Rueda.—p. 261.
- Inoculation Tests in Diagnosis of Pulmonary Tuberculosis. R. Barralt.—p. 266.

Carbohydrate Metabolism in Suprarenal Insufficiency.—The experiments reported by Estrada seem to demonstrate an antagonistic action of the different parts of the suprarenals in respect to carbohydrate metabolism. The cortex favors the formation of glycogen at the expense of glucose, while the other parts of the gland, and their active substance, epinephrine, favor the transformation of glycogen into glucose. It is possible that the active substance of the cortex normally accumulates in the tissues. This would explain the curious lack at first of any symptoms in experimental suprarenal insufficiency except the hypoglycemia, and then the rapidly fatal decline.

Semana Médica, Buenos Aires

1: 429-480 (March 4) 1926

- *Comparison of Sarcoma in Man and Fowls. Brachetto Brian.—p. 429.
- Trajectory of Nail Piercing Child's Chest. Larguia and Vergnolle.—p. 432.
- *Intestinal Invagination in Infants. M. Steinsleger.—p. 435.
- *Convalescents' Serum in Scarlet Fever. Cucullu and Grosso.—p. 441.
- Heart Disease and Pregnancy. Daniel A. Rojas.—p. 446.
- The Rosario Infant Asylum. P. Rueda.—p. 452.
- Tuberculosis and Sanocrysin. J. Dutrey.—p. 456.
- Teaching of Mothercraft in Normal Schools. D. E. Caravias.—p. 477.

Myxosarcoma in Man and the Peyton-Rous Chicken Sarcoma.—Brachetto Brian's testimony as to the close resemblance between these two sarcomas was summarized in these columns, Nov. 14, 1925, p. 1593. He thinks that the few points of difference can be traced to the soil.

Intestinal Invagination in Infants.—Steinsleger reports twelve recoveries among the twenty infants, aged from 1½ to 17 months, given operative treatment by Maidagan; all recovered in his own eleven cases. The outcome depends on early diagnosis and immediate surgical correction of the invagination. One child recovered although the invagination was of forty-eight hours' standing. Both ileum and cecum were involved in the majority, but in one the ileum alone. In this case there was no bleeding and the tumor was barely perceptible, but the signs of obstruction compelled immediate intervention and the child was saved. The exceptional movability of the cecum in young infants explains the predisposition to invagination at this age.

Convalescents' Serum in Scarlet Fever.—Cucullu and Grosso declare that the Schultz-Charlton extinction test is useful not only in diagnosis but has a decided curative action besides. They give an intradermal injection of 1 cc. of convalescents' serum to each scarlet fever patient admitted to the ward. The blanching reaction was obtained in 94 per cent of those at the second day of the disease, the responses growing less as the disease progressed, to 33 per cent the fifth day and zero the sixth. They repeated it as a therapeutic measure at one or more days' intervals, injecting 1 or 2 cc. of convalescent serum. The effect was unmistakable on the decline of the eruption and the fever. A single injection arrested the otorrhea, and if it flared up a few days later, another injection completed the cure. They tabulate the details of eighty cases; in the eighteen with otorrhea, 39 per cent were thus cured; the others improved but the course was not completed owing to intercurrent disease or the family taking the child away.

1: 689-740 (April 8) 1926

- *Pneumothorax Treatment in Pregnancy. M. L. Pérez et al.—p. 689.
- Transfusion in Obstetric Practice. A. Guiroy.—p. 698.
- Bibliography on Ossification of the Eye. P. Satanowsky.—p. 706.
- *Labyrinth Reflex with Brain Tumors. P. L. Errecart.—p. 707.
- Prostheses for Perforated and Cleft Palate. R. A. Crespi.—p. 710.
- Influence of Drying Temperature on Drugs. L. de Prado.—p. 724.
- Plasmogenesis in 1925. A. L. Herrera.—p. 729.

Induced Pneumothorax in the Pregnant Tuberculous.—The case reported by Pérez, Mascheroni and Tourreilles in a young primipara demonstrates the lasting improvement under collapse therapy even during the stress of childbearing. The tuberculous process involved the right lung and both apices. Nitrogen was injected sixteen times during the six months before delivery. The pneumothorax has been continued during the seven months since, and the condition is still persistently good.

Labyrinth Reflex with Brain Tumors.—Errecart calls attention to the exaggeration of the contralateral labyrinth reflex in cases of cerebellopontine tumors.

Siglo Médico, Madrid

77: 385-412 (May 1) 1926

- *Epididymectomy in Genital Tuberculosis. Bastos.—p. 385.
- Auditory and Visual Hallucinations of Cortical Origin. G. R. Lafora.—p. 390.
- Bone Diseases in Prehistoric Times. V. Delfino.—p. 391.

Epididymectomy in Genital Tuberculosis.—Bastos remarks that in four of the ten cases in which he removed the epididymis the tuberculous process was bilateral from the first. Only in two was it strictly limited to the epididymis, and in all the lesion was evidently secondary to a tuberculous process elsewhere. All were improved or cured of their genital process, and there has been no recurrence on the other side in any instance, although a fistula long persisted in four cases and one required castration. The interval since has been from one to four years.

77: 465-484 (May 22) 1926

- *Diagnosis of Morphine Addiction. C. Juarros.—p. 465.
- Clinical Reminiscences of a Country Doctor. P. Luengo.—p. 467. C'tn.
- Histology of the Pineal Gland. P. Ruiz Santolaya.—p. 470.

Morphine Addiction.—In the course of this study of morphine addiction, Juarros says that the sedimentation test and the Hecht reaction are the simplest and most convenient means for ascertaining whether the patient being treated is obtaining morphine or not. The sedimentation of erythrocytes is accelerated in proportion to the amount of morphine in the body. Hecht insists on the reliability of the response when intradermal injection of 0.005 Gm. of morphine induces a wheal, like those of urticaria. It appears in a few seconds and disappears in an hour or two. This is the only sign which testifies that the patient is getting morphine.

Archiv für Gynäkologie, Berlin

128: 391-628 (May 15) 1926

- Birth Mechanism with Contracted Pelvis. P. Schumacher.—p. 391.
- *Inflammatory Origin of Tubal Atresia. I. Kitai.—p. 413.
- Annular Placenta. L. Fraenkel and J. Granzow.—p. 442.
- Uterine Sarcoma of "Rhythmic" Structure. W. Geisler.—p. 452.
- *Renal Function and Pregnancy. R. Kräuter.—p. 467.
- Folliculoma of the Ovary. A. Blau.—p. 506.
- *Wassermann Test at Parturition. H. Boas et al.—pp. 527 and 537.
- *Functional Disturbances of Puberty Period. A. v. Fekete.—p. 540.
- *Pregnancy and Pulmonary Tuberculosis. F. Schultze-Rhonhof.—p. 563.
- Ovarian Hematomas and Endometrioid Formations. R. Cordua.—p. 617.

The Inflammatory Origin of Atresia and of Heterotopic Epithelial Proliferation in the Tubes.—Kitai believes that atresia and heterotopic proliferation of the mucous membrane of the fallopian tube are nearly always the result of inflammation, and are not congenital malformations. He presents microscopic studies of seven cases.

Renal Function and Pregnancy.—Kräuter studied the regulating power of the kidney on the acid-base equilibrium of the blood in pregnancy, as reflected in the urine. Curves are presented showing the variations in the hydrogen ion concentration of the urine during the day, in different stages of pregnancy, and in eclampsia and with various diets. The variations during the day, while present, are less than in nonpregnant healthy women. Hydrochloric acid given by mouth had little or no influence on the p_H of the urine, and bicarbonate of soda injected intravenously failed to raise the alkalinity of the urine to the height normally to be expected. These facts point to functional deficiency of the kidney in pregnancy. Disturbances at the beginning of pregnancy have little effect on the p_H curves following administration of an excess of acid or alkali. In slight disturbances in the later months, the reaction remains neutral or, on administration of alkali, becomes alkaline. In severe cases of renal disease consequent on dilatation of the abdominal vessels. The latter is caused by a particular stimulation of the vagus, a vagotonia of the vascular system. Venesection in eclampsia relieves the abdominal vessels, and thereby lowers the compensatory high blood pressure. The changes in the liver and the kidneys in eclampsia could be explained by a vasoconstriction comparable to the peripheral compensatory vasoconstriction. Since, however, vagotonia exists in normal pregnancy, something more is required to explain the "hyperphenomena of pregnancy" seen in eclampsia. The influence of the fetus and the placenta and the rôle of the lipoids are being studied in this regard.

50: 1489-1552 (June 5) 1926

Interferometric Examinations. H. Runge.—p. 1490.
*Sterilization for Pregnancy Anemia. A. Reist.—p. 1496.
Fatty Degeneration of the Endometrium. H. Hartmann.—p. 1500.
Primary Carcinoma of the Fallopian Tube. W. Beck.—p. 1503.
Injury from Compression of the Aorta. Haselhorst.—p. 1508.
Dicephalus Tribrachius Dipus. G. v. Zur-Mühlen.—p. 1514.
Treatment of Postpartum Hemorrhages. H. Lorenzen.—p. 1518.
Implantation of Fallopian Tube. R. Kiparsky.—p. 1523.
Tubal Insufflation; Sterility. A. Mandelstamm.—p. 1527.

Sterilization for Pregnancy Anemia.—From a consideration of published cases, including one of his own, Reist argues that sterilization is justified in anemia of pregnancy of pernicious type, where the patient already has several children and her history indicates functional weakness of the bone marrow. There is decided danger of recurrence of the anemia in a future pregnancy.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 2489-2608 (June 12) 1926

*Spontaneous Pneumothorax. A. J. A. Koelensmid.—p. 2490.
*Radiation of Heat from Skin. E. Sluiter and G. van Rijnberk.—p. 2496.
Congenital Cystic Lung and Bronchiectasia from Defective Development. Cornelia de Lange.—p. 2515.
Infectious Sore Throat with Lymphatic Reaction Persisting for a Month, with Mild Sepsis. Joustra.—p. 2525.

Spontaneous Pneumothorax.—Koelensmid accepts the spontaneous pneumothorax, in the case of hemorrhagic pleuritis described, as the first clinical manifestation of tuberculosis, but since the recovery from the pneumothorax there have been no further signs of an active process. In another case the spontaneous pneumothorax became encapsulated, and in a third case, there were two recurrences, six and eighteen months apart.

Radiation of Heat from the Skin.—Sluiter and Rijnberk describe the electric thermoscope devised for study of the temperature of the skin, covered or uncovered. The wide differences in the radiation of heat at different points of the skin may be explained by the nearness of large blood vessels to the surface, but this does not apply to all points. It is a mystery why the radiation seems to be particularly intense at certain points where the skin lies close to a bone surface, over the spine, over the sternum, over the tibia, and over the forehead. The radiation was exceptionally low ,at points with a thick layer of subcutaneous fat.

1: *2637 2752 (June 19) 1926*

Comparison of Different Methods for Immunizing Against Diphtheria. H. Aldershoff.—p. 2638.
The Use of Bifocal Spectacles. A. Verwey.—p. 2646.
*Appendectomy and the Ileocecal Gland. R. J. Harrenstein.—p. 2652.
Prevention of General Paralysis. D. Mulder.—p. 2673.
A Third Ureter with Outlet in Vagina. Van Ramshorst.—p. 2684.

Benefit from Appendectomy.—Harrenstein was impressed by the way in which a weakly, listless child, always without appetite, began to thrive and eat with relish after the appendix had been removed. He had blamed himself for the unnecessary operation, as the appendix proved to be absolutely sound. The rapid and complete change for the better suggested that the operation might have improved mechanical conditions in the region. This assumption was confirmed by other experiences, and by study of mechanical conditions in the ileocecal valve region in fifty-seven child cadavers. His research has convinced him that insufficiency of the ileocecal valve is responsible for more or less of the disturbances we have been ascribing to chronic appendicitis. In tending the stump of the appendix, we have casually improved mechanical conditions for the valve. The structure of the junction between the large and small intestine is different in men and from that in other animals, due to the erect posture. valve closes, and prevents the contents of the cecum sliding back into the small intestine. Appendectomy mechanical conditions and removes the source of interference with normal functioning of the valve.

Hospitalstidende, Copenhagen

69: 365-388 (April 22) 1926

*The Temperature of the Body. J. Ipsen.—p. 365.
*Light Treatment of Lupus. H. Haxthausen.—p. 379. C'cn.—p.

69: 389-412 (April 29) 1926

Opaque Substance by Mouth in Cholecystography. S. Kiær.—p.
Case of Subastragaloid Dislocation of Foot. Jensen.—p. 406.

The Temperature of the Body.—Ipsen introduced se thermometers into the various deep tissues at under general anesthesia. The differences in the temper at different points may amount to as much as several The highest figures were always found in the rectum small pelvis; the temperature of the peritoneum kept even during long operations. The duration of the anesthe did not seem to modify the rectal temperature. As muscles are not working during the anesthesia, the temperature curve in them is not so instructive as under conditions.

Finsen Light Treatment of Lupus.—Haxthausen relates with the greater concentration of the therapeutic irradiation now possible by the improved technic shutting off the rays, fourteen patients out of sixty-four old inveterate cases of lupus have been cured, and thirty-one much improved Preceding roentgen-ray treatment is responsible for failures in some of the others. All the more recent cases have been cured, and in a shorter time than hitherto deemed possible.

Ugeskrift for Læger, Copenhagen

88: 525-558 (June 3) 1926

*Pathologic Modification of Deep Reflexes. Christiansen.—p. 525.
*Improved Technic for Light Treatment. S. Lomholt.—p. 541.
*Research on Carbohydrate Metabolism. XVI. S. A. Holbøll.—p. 547.
Injection Treatment of Varicose Veins. Alstrup.—p. 550. Idem. Meisen.—p. 551.

The Deep Reflexes in Diagnosis.—In this comprehensive study of pathologic modifications of the deep reflexes, Christiansen warns that the same intensity of the reflex movement which is normal in one person may represent attenuation or exaggeration in others. The age also has a great influence, and unless the patient's attention is actually diverted, latent reflexes may escape detection. With more effectual diversion of the attention, an apparently abolished deep reflex may prove to be actually exaggerated. His illustrations show his preferred technic, and he describes some instructive puzzling cases. In one young man with symptoms suggesting compression of the spinal cord, the knee-jerk was abolished on both sides but the foot clonus and cremaster reflexes were active, and also the Babinski toe sign on the left side. This located the process.

Improved Technic for Finsen Light Treatment.—Lomholt describes the simple means for filtering the concentrated arc light through a deep layer of water. This reduces the passage of heat while not interfering with the therapeutic action, and allows much larger doses.

Speed of Destruction of Dextrose in Blood.—Holbøll states that addition of fluoride to human blood prevents glycolysis completely, while oxalate partially checks it. Citrate and herudin do not seem to influence it. The destruction proceeds more rapidly at 37 than at 20 C.

88: 559-576 (June 10) 1926

Principles of Modern Obstetrics. S. A. Gammeltoft.—p. 559.
*Cancer of the Tongue. V. Schmidt.—p. 565.
Prophylaxis of Contagion from the Tuberculous. Schroeder.—p. 570.

A Sarcoma After Radiotherapy.—Schmidt discusses whether the cancer of the tongue was a mixed carcinoma-sarcoma from the first, or whether the roentgen and radium treatment after resection of the unmistakable carcinoma was responsible for the pure sarcoma that developed.